

VINEETH N BALASUBRAMANIAN

Microsoft Research India,
Vigyan 1st floor, 9, Lavelle
Road, Ashok Nagar, Bengaluru,
Karnataka 560001, INDIA

CS-310, Dept of Computer
Science and Engg, Indian Institute
of Technology - Hyderabad,
Kandi, Telangana 502284, INDIA

+91 9959170842
vineethnb@cse.iith.ac.in,
vineeth.nb@microsoft.com
<https://people.iith.ac.in/vineethnb/>

RESEARCH INTERESTS/KEYWORDS

Machine/Deep Learning; Computer Vision; Multimodal Foundation Models; Reasoning/Explainable AI

EDUCATION

Ph.D. (Computer Science) Arizona State University, Tempe, AZ	2010 CGPA: 4.00/4.00
Masters in Technology (Computer Science) Sri Sathya Sai Institute of Higher Learning, India	2003 CGPA: 5.00/5.00
Masters in Science (Math) Sri Sathya Sai Institute of Higher Learning, India	2001 CGPA: 4.97/5.00
Bachelors in Science (Math) Sri Sathya Sai Institute of Higher Learning, India	1999 CGPA: 4.95/5.00

EMPLOYMENT

Co-Founder Avartan Labs , Hyderabad, India	Jun 2025 - present
Principal Researcher Microsoft Research India, Bangalore, India	Oct 2024 - present
Professor Department of Computer Science and Engineering, Indian Institute of Technology, Hyderabad, India	Oct 2023 - present
Chief Project Manager AI Centre of Excellence in Sustainable Cities (Phase 1), Indian Institute of Technology, Hyderabad, India	Mar 2024 - Oct 2024
Fulbright-Nehru Fellow/Visiting Faculty Carnegie Mellon University, USA	Oct 2022 - Jul 2023
(Founding) Head , Department of Artificial Intelligence, Indian Institute of Technology, Hyderabad, India	Apr 2019 - Apr 2022
Affiliate Faculty , Department of Artificial Intelligence, Indian Institute of Technology, Hyderabad, India	Apr 2019 - present
Associate Professor Department of Computer Science and Engineering, Indian Institute of Technology, Hyderabad, India	Apr 2018 - Sep 2023
Assistant Professor Department of Computer Science and Engineering, Indian Institute of Technology, Hyderabad, India	Jul 2013 - Mar 2018
Assistant Research Professor School of Computing, Informatics and Decision Systems Engineering Arizona State University, USA	Jan 2011 - Jul 2013
Postdoctoral Research Assistant Center for Cognitive Ubiquitous Computing (CUBIC), Arizona State University, USA	Sep 2010 - Dec 2010

Research Associate Center for Cognitive Ubiquitous Computing (CUBiC), Arizona State University, USA	Aug 2005 - Aug 2010
Teaching Associate Department of Computer Science and Engineering, Arizona State University, USA	Aug 2005 - May 2010
Applications Engineer Oracle Corporation, Hyderabad, India	Oct 2003 - Jul 2005

HONORS & AWARDS¹

Outstanding Paper , Logical Reasoning of Large Language Models Workshop, ICLR'26	2026
National Award to Teachers , Ministry of Education (annually awarded by Hon'ble President of India)	2025
Fellow , Indian National Academy of Engineering (INAE)	2024
Associate Fellow , Indian National Science Academy (INSA)	2024
Best Reviewer , ICML 2024* (Top ~3%)	2024
Microsoft Research Accelerating Foundation Models Research Award (Phase 2)	2022-23
Listed in Stanford World's Top 2% scientists	2022,23,24,25
Senior Member , AAAI (one of 15 globally selected)	2023
Distinguished PC Member (Reviewer) , IJCAI 2023*	2023
Research Excellence Award , IIT-Hyderabad	2022-23
Fulbright-Nehru Academic and Professional Excellence Fellowship	2022-23
Best Paper Award Honorable Mention , Continual Learning in Computer Vision (CLVISION) workshop, CVPR 2022	2022
NASSCOM AI Gamechangers Award (DL Algorithms/Architecture category) * <i>Winner and Runner-up</i> *	2022
Microsoft Academic Partnership Grant Award	2022
Google exploreCSR Grant Award	2021-22
Best Paper Award , Research track, CODS-COMAD 2022	2022
Best Paper Award , Causality in Vision workshop, CVPR 2021	2021
Best Paper Award , Adversarial Machine Learning in Real-World Computer Vision Systems and Online Challenges workshop, CVPR 2021	2021
Teaching Excellence Award , IIT-Hyderabad	2021
Google Research Scholar Award (earlier known as Google Faculty Research Award)	2021
Outstanding Reviewer , ICLR 2021*	2021
SreePVF Research Grant Award (Co-PI, PI: Vandana Sharma)	2021
Outstanding Reviewer , BMVC 2020	2020
Outstanding Reviewer , ECCV 2020*	2020
Best Paper Award Runner-up , ACM CODS-COMAD 2020	2020
Outstanding Reviewer , CVPR 2019*	2019
TCS PhD Fellowship award for PhD student, Joseph K J (<i>competitive program awarded based on proposals submitted by faculty jointly with students</i>)	2019

¹ Asterisk (*) indicates conferences ranked A/A* by CORE

Verisk AI Faculty Research Award	2018
IBM Shared University Research Award	2018
Teaching Excellence Award, IIT-Hyderabad	2017
Intel PhD Fellowship awards for PhD students, Adepu Ravi Sankar and Arghya Pal (competitive program awarded based on proposals submitted by faculty jointly with students)	2015, 2016
NVIDIA Best Paper Award in GPU Computing, IEEE International Conference on High-Performance Computing	2014
Listed in Marquis Who's Who in America	2012, 2014-16
PhD Dissertation nominated for Outstanding PhD Thesis Award, Computer Science, ASU	2010
Teaching Excellence Award finalist (chosen among all departments across University), Graduate & Professional Student Association, ASU	2010
IEEE Computers in Cardiology Rosanna Deganni Young Investigator Award finalist	2009
Best Paper Award, IEEE HAVE (Haptic Audio Video Environments) Workshop	2008
Entrepreneurship Advantage Program Award, Arizona State University	2008
Dr. A.P.J. Abdul Kalam, President of India, Gold Medal for Academic Excellence in Masters of Technology program	2003
Gold Medal for Academic Excellence in Bachelors of Science (Math) program	1999
National Talent Search Examination (NTSE) Scholarship, a prestigious scholarship awarded by National Council of Educational Research and Training, India (top 0.25%)	1994

RESEARCH GRANTS/PROJECTS

[G.35]	Stereovision AI-assisted 3D Vein Imaging for Challenging Vascular Access in Patients , Wadhvani Innovation Network (WIN) Center of Excellence at IIT Hyderabad, Nov 2025- Oct 2027, Rs 2.67 crores (Co-PI Role, PI: Vandana Sharma)
[G.34]	Trustworthy Machine Learning for Interpretable, Fair And Robust AI Systems Microsoft Research India PhD Award * <i>Competitive/Highly selective award</i> *, Jun 2024 - Dec 2025, Rs 10 lakhs (for funding PhD student, Sai Srinivas Kancheti)
[G.33]	AIswARYAM: AI for Sustainable Resource Planning, Analysis and Monitoring AI Centre of Excellence for Sustainable Cities Phase 1 * <i>11 of 55 awarded</i> *, Mar 2024 - Sep 2024, Rs 2 crores
[G.32]	Leveraging Large Language Models in Causal Inference and Learning Microsoft Accelerating Foundation Models Research Grant (Phase 2) * <i>Competitive/Highly selective award</i> *, Nov 2023 - Jun 2024, USD 20000 (Azure API access for GPT models)
[G.31]	Algorithmic Recourse for Actionable Explanations in AI Models Microsoft Academic Partnership Grant * <i>Competitive/Highly selective award</i> *, Jul 2022 - Jun 2023, Rs 15 lakhs
[G.30]	Development of Real-time Video Perception Capabilities for an Autonomous Robot , RCI, Defense Research and Development Organization (DRDO), Govt of India, Jun 2022- May 2024, Rs 2.67 crores (Co-PI Role, PI: Sumohana Channappayya)
[G.29]	Causal Reasoning in Time-varying Data Streams with Concept Drift Adobe Research Gift. PI, Dec 2021-Jun 2023, 10000 USD/Rs 7.4 lakhs (Co-PI: Gaurav Sinha, Adobe Research)
[G.28]	Promotion of Under-represented Groups in CS Research Google exploreCSR grant award * <i>Competitive/Highly selective award</i> *, PI, Dec 2021-Nov 2022, 6000 USD/Rs 4.6 lakhs
[G.27]	Bridging Perspectives of Explainability and Adversarial Robustness Google Research Scholar Award * <i>Competitive/Highly selective global award</i> *

- PI, Apr 2021-Mar 2022, 35000 USD/Rs 26 lakhs
- [G.26] **3D Imaging based Vein Intrusion Guide System for Pediatric and Geriatric Healthcare**
SreePVF Research Grant Award, Co-PI, Feb 2021-Jan 2024, Rs 2.3 crores (Co-PI Role, PI: Vandana Sharma)
 - [G.25] **Learning with Limited Labeled Data: Solving the Next Generation of Machine Learning Problems**, DST-JSPS Joint Research Project (Indo-Japan Cooperative Science Programme)
PI, Jan 2021-Dec 2022, Rs 8.18 lakhs (Co-PI: Tatsuya Harada, Univ of Tokyo)
 - [G.24] **Causal Perspectives in Feature Subset Selection in Time Series Data**
Adobe Research Gift,
PI, Mar 2021-Feb 2022, 5000 USD/Rs 3.7 lakhs (Co-PI: Gaurav Sinha, Adobe Research)
 - [G.23] **Deep Learning Techniques on BBP Images and Data**
KLA Corporation, PI, Jan 2021-Dec 2024, 100000 USD/Rs 80 lakhs
 - [G.22] **Deep Learning Methods for Learning with Limited Data**
Adobe Gift
PI, Sep 2020-Aug 2021, Rs 5.25 lakhs
 - [G.21] **Adversarial Robustness in Deep Neural Network Models**, Microsoft Research Postdoctoral Fellowship funding program
PI, Jul 2020 - Jun 2022, Rs 20 lakhs
 - [G.20] **Advanced Vision Technologies for Road Mobility and Safety**, SERB/DST IMPRINT (*co-supported by Intel*)
PI, Jul 2019-Jun 2022, Rs 3.1 crores (Co-PIs: C V Jawahar, Chetan Arora)
 - [G.19] **Design and Development of a Passenger Drone**, MeiTY
PI, Mar 2019-Feb 2022, Rs 9.8 crores (joint project with IIIT-Hyderabad, IIIT-Sri City)
 - [G.18] **Vision and Learning with Limited-to-No Supervision: Applications to Autonomous Navigation and Beyond**, Intel Corporation
Co-PI, Oct 2018-Sep 2019, Rs 92 lakhs (PI: C V Jawahar)
 - [G.17] **Towards Next-Generation Deep Learning: Faster, Smaller, and Easier**
DST ICPS Data Science Program
PI, Aug 2018-Jul 2021, Rs 57 lakhs (Co-PIs: Srijith P K, Ramakrishna U, Sathya P)
 - [G.16] **Detection and Prediction of Anomalous Aerial Vehicle Behaviour using Explainable Artificial Intelligence**, MHRD Uchhatar Avishkar Yojana (UAY) Program (*co-supported by Honeywell*)
PI/Supervisor, Jul 2018-Jun 2021, Rs 60 lakhs
 - [G.15] **Thermal Image Processing and Deep Learning Algorithms for Human Detection**
Defense Research and Development Organization (DRDO), Govt of India (CARS project)
PI/Supervisor, Jan 2019-Jan 2020, ~ Rs 9,00,000
 - [G.14] **Understanding Error Surfaces of Deep Neural Networks**
DST MATRICS (Mathematical Research Impact Centric Support) Program
PI/Supervisor, Jun 2018-May 2021, Rs 6,60,000
 - [G.13] **Taking Vision to the Skies: Understanding Humans from Unmanned Aerial Vehicles (Drones)**
IBM Shared University Research Award
PI/Supervisor, Jan 2018-Dec 2018, USD 10,000
 - [G.12] **Data Science-based Farming Support System for Sustainable Crop Production under Climatic Change**
DST-JST Indo-Japan Joint Funding Program
Co-PI (PI: Prof U B Desai), Dec 2016-Nov 2020, Rs 5,00,00,000 (5 crores)
 - [G.11] **Deep Learning for Visual Recognition in Aerial Images**
Defense Research and Development Organization (DRDO), Govt of India (CARS project)
PI/Supervisor, Jan 2017-Jun 2018, Rs 10,00,000
 - [G.10] **Automatic Recognition of Hand-drawn Sketches for Learning Environments**

- IBM Students for a Smarter Planet Program
PI/Supervisor, Oct 2015-Sep 2016, USD \$3000
- [G.9] **Data Analytics for Security and Surveillance**
State Govt of Telangana
PI/Supervisor, Aug 2015-Jul 2018, Rs 20,00,000
- [G.8] **Mathematical Foundations of Probabilistic Conformal Prediction and its Applications in Machine Learning**
EPSRC-DST Indo-UK Initiative In Applied Mathematics (grant for workshop organization)
PI/Workshop Organizer, Dec 2015, Rs 9,80,000 + GBP 11,000
- [G.7] **e-DRISHTI: Automatic Determination of Student Engagement for Personalized e-Learning**
IBM Students for a Smarter Planet Program
PI/Supervisor, Oct 2014-Sep 2015, USD \$3000
- [G.6] **Deep Learning Architectures for Human Action Recognition in the Wild**
IIT Hyderabad Startup Grant & NVIDIA Academic Hardware Donation Program
PI, Aug 2014-Jul 2017, Rs 500,000 + Tesla K40 GPU
- [G.5] **Assistive Social Situational Awareness Aids for Individuals with Disabilities**
US National Science Foundation, IIS # 1116360
Co-PI, Aug 2011 - Mar 2014, USD \$499,286(Principal Investigator: Prof Sethuraman Panchanathan)
- [G.4] **Person-centered Technologies and Practices for Individuals with Disabilities**
US National Science Foundation, IGERT Award # 1069125
Research Director/IGERT Faculty, Aug 2011 - Jul 2016, USD \$2,990,159 (Principal Investigator: Prof Sethuraman Panchanathan)
- [G.3] **Biosensing Wearables for Socio-Assistive Technologies to Aid Children with Autism**
Fulton Undergraduate Research Initiative (FURI) Award, Arizona State University, USA
Lead Investigator/Student Advisor, May 2012 - May 2013, USD \$1200
- [G.2] **The Dyadic Interaction Assistant for Individuals with Visual Impairments**
Fulton Undergraduate Research Initiative (FURI) Award, Arizona State University, USA
Lead Investigator/Student Advisor, May 2012 - May 2013, USD \$1200
- [G.1] **Head-based Communications Tool for Autistic Children**
Entrepreneur Advantage Program, Arizona State University, USA
Lead Investigator, Jan 2009 - May 2009, USD \$2000

CONSULTING

- [C.3] Sony Research, Deep Learning R&D, 2022-2024
- [C.2] AdTech Corp, Deep Learning and Computer Vision for Real-World Industry Applications, 2018-19
- [C.1] Ekam Technologies, Machine Learning and Applications, 2016

TEACHING EXPERIENCE *(if not specified, the course was taught at IIT-Hyderabad)*

Introduction to Programming (<i>Institute-wide 1st-year undergraduate course</i>)	Fall 2023
Causal Inference and Learning	Spring 2021
Deep Learning for Computer Vision (NPTEL course) * <i>Total registration of 50000+ students so far*</i>	Fall 2020, 2021, 2022, 2023, 2024, 2025, 2026
Deep Learning for Computer Vision (IITM BS in Data Science)	2024, 2025, 2026
Deep Learning for Vision (CS5370)/Deep Learning (CS5480)	Spring 2017, Spring 2018, Fall 2019, Spring 2020, Spring 2021, Spring 2022, Spring 2023
Optimization Methods in Machine Learning (CS6230)	Fall 2016, Fall 2017, Fall 2018
Applied Machine Learning (CS6510)/Foundations of Machine Learning	Fall 2016, Fall 2017, Fall 2018, Spring 2019, Fall 2019, Fall

(CS5590/AI5000/AI2000)	2020, Fall 2021, Fall 2022, Fall 2024
Research Methods (CS6000)	Spring 2025
Mathematical Foundations of Data Science: Linear Algebra (CS6360)	Spring 2016
Advanced Topics in Machine Learning (CS6360)	Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2022, Spring 2024
Computer Vision (CS5270) / Image Analytics (CS6540)	Fall 2015
Numerical Linear Algebra for Data Analysis (CS5270)	Spring 2015
Visual Recognition (CS5230)	Fall 2014
Introduction to Database Management Systems (CS3010) and Database Management Systems Lab (CS3011)	Fall 2013, Spring 2014
IGERT Course on Human Factors (BME 598) (Guest Instructor) Biomedical Engineering, ASU (Topic: Machine Learning Methods with Humans-in-the-Loop)	Spring 2013
Human-centered Computing: Assistive Technologies (CSE 591) Developed a new interdisciplinary course on the design, development and use of assistive technologies for individuals with sensory, motor, perceptual and cognitive disabilities.	Fall 2012
Multimedia Information Systems (CSE 408) (Guest Instructor) Computer Science and Engineering, ASU (Topic: Video and Image Compression)	Fall 2011
Teaching Associate, Arizona State University <i>Computer Organization/Assembly Language Programming (CSE/EEE 230), Programming for Computer Engineering (CSE 220), Introduction to Theoretical Computer Science (CSE 355)</i> * Nominated for ASU GPSA Teaching Excellence Award by students in Spring 2010 *	Fall 2005 - Spring 2010

PROFESSIONAL SERVICE

Steering Committee/Advisory Board

- Research & Innovation Advisory Council (RIAC), IIIT-Hyderabad, 2024 - present
- Advisory Council, Ocean Vision AI (OVAI), Mar 2023 - present
- Steering Committee Member, Asian Conference on Machine Learning (ACML), Jan 2023 - present
- Steering Committee Member, Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2023-24
- Research Advisory Board, Apollo Hospitals Educational and Research Foundation, 2023 - present

Organizing Committee/Senior Roles²

- General Chair, ACM IKDD 14th International Conference on Data Science (CODS), 2026
- General Chair, Asian Conference on Machine Learning (ACML), 2022
- General Chair, Indian Symposium on Machine Learning (IndoML), 2025
- Program Co-Chair, Asian Conference on Machine Learning (ACML), 2021
- Next-Generation and Accessibility Chair, Neural Information Processing Systems (**NeurIPS***), 2026
- Area Chair, Neural Information Processing Systems (**NeurIPS***), 2026
- Area Chair, International Conference on Machine Learning (**ICML***), 2025, 2026
- Area Chair, IEEE/CVF International Conference on Computer Vision (**ICCV***), 2021, 2023, 2025
- Area Chair/Senior PC, AAAI Conference on Artificial Intelligence (**AAAI***), 2020, 2021, 2023, 2024,

²Asterisk (*) indicates conferences ranked A/A* by CORE

2025, 2026

- Area Chair, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR*), 2020, 2022, 2025, 2026
- Area Chair, European Conference on Computer Vision (ECCV*), 2022, 2024, 2026
- Area Chair, International Conference on Artificial Intelligence and Statistics (AISTATS*), 2025, 2026
- Area Chair, IEEE/CVF Winter Conference on Applications of Computer Vision (WACV*), 2021, 2022
- Area Chair/Senior PC, International Joint Conference on Artificial Intelligence (IJCAI*), 2018, 2020, 2021, 2022, 2024, 2025
- Guest Editor, [Special Issue on Visual Domain Generalization in Real-World Applications](#), International Journal of Computer Vision, 2024-25 (Impact factor: 11.6)
- Guest Editor, [Special Issue on Conformal Prediction and Distribution-Free Uncertainty Quantification](#), Pattern Recognition, 2024-25 (Impact factor: 8.52)
- Workshops Chair, Asian Conference on Computer Vision (ACCV*), 2024
- Area Chair, Asian Conference on Computer Vision (ACCV*), 2022
- Senior Reviewer, Conference on Lifelong Learning Agents (CoLLAs), 2022, 2023, 2024, 2025
- Sponsorship Chair, Indian Conference on Computer Vision, Graphics & Image Processing (ICVGIP), 2025
- Workshop Proposal Reviewer, International Conference on Machine Learning (ICML), 2023, 2024
- Co-organizer, Workshop on Autonomous Navigation in Unconstrained Environments (AutoNUE) at IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR*), Jun 2021
- Co-organizer, AAAI Journal-sponsored Workshop on Trustworthiness of AI systems and its impact on Society in Developing Nations, Jan 2021
- Journal Track Co-Chair, Asian Conference on Machine Learning (ACML), 2020
- Tutorials Co-Chair, SPCOM 2020
- Tutorials Co-Chair, NCVPRIPG 2019
- Area Chair, Asian Conference on Computer Vision (ACCV), 2018
- Program Chair, Indian Conference on Computer Vision, Graphics & Image Processing (ICVGIP), 2018
- Program Chair, Workshop on AI and Impact on Society in Developing Nations (AAAI event), Dec 2018
- Technical Program Co-Chair, National Conference on Communication (NCC), 2018
- Area Chair, Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), 2016
- Co-organizer, Workshop on Assistive Vision, Asian Conference on Computer Vision (ACCV), 2016
- Technical Co-chair, IBM Collaborative Academia Research Exchange (I-CARE) Conference, 2016
- Organizer, Indo-UK workshop on Conformal Prediction for Reliable Machine Learning, 2015
- Co-chair, Special Session on Machine Learning for Human Behavior Understanding and Assisted Living, 10th International Conference on Machine Learning and Applications (ICMLA), 2011
- Local Arrangements Co-chair, ACM Multimedia (ACM MM*), 2011
- Demos Co-chair, IEEE International Workshop on Haptic Audio Video Environments and Games, 2010

Program Committee/Conference Review

- | | |
|---|--------------|
| ○ International Conference on Machine Learning (ICML*) | 2020-24 |
| ○ Neural Information Processing Systems (NeurIPS*) | 2019-present |
| ○ European Conference on Computer Vision (ECCV*) | 2020 |
| ○ International Conference on Learning Representations (ICLR*) | 2020-present |
| ○ International Conference on Artificial Intelligence and Statistics (AISTATS*) | 2022-present |
| ○ SIAM Conference on Data Mining (SDM*) | 2020 |
| ○ IEEE/CVF Intl Conference on Computer Vision and Pattern Recognition (CVPR*) | 2019,21 |
| ○ AAAI Conference on Artificial Intelligence (AAAI*) | 2019 |
| ○ IEEE International Conference on Computer Vision (ICCV*) | 2017,19 |
| ○ International Joint Conference on Artificial Intelligence (IJCAI*) | 2016,17,19 |
| ○ IEEE Winter Conference on Applications of Computer Vision (WACV*) | 2011-present |
| ○ European Conference on Machine Learning (ECML-PKDD*) | 2019 |
| ○ IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS*) | 2018 |

- Asian Conference on Computer Vision (ACCV) 2012-present
- Symposium on Learning and Data Sciences (SLDS) 2015-
- Indian Conf on Computer Vision, Graphics and Image Processing (ICVGIP) 2014-present
- IEEE Conference on Signal Processing and Communications (SPCOM) 2016-
- Workshop on Conformal Prediction and its Applications (COPA) 2012-
- International Conference on Pattern Recognition Applns and Methods (ICPRAM) 2012-
- International Conference on Artificial Neural Networks (ICANN) 2011

Journal Review/Editorship

- **Associate Editor:** International Journal of Computer Vision (**Impact factor: 9.3**), Pattern Recognition journal (**Impact factor: 9.1**)
- **Reviewer:** IEEE Transactions on Pattern Analysis and Machine Intelligence, Journal of Machine Learning Research, IEEE Transactions on Neural Networks and Learning Systems, International Journal of Computer Vision, IEEE Transactions on Knowledge and Data Engineering, Springer Machine Learning, Pattern Recognition, IEEE Transactions on Multimedia, IEEE Transactions on Fuzzy Systems, IEEE Signal Processing Letters, Computer Vision and Image Understanding, Annals of Mathematics and Artificial Intelligence, International Journal of Pattern Recognition and Artificial Intelligence, Journal of Visual Communication and Image Representation, The Visual Computer, SADHANA (Indian Academy of Sciences journal)

Community Mentorship

- Mentor, ACM India PhD Clinic at CODS-COMAD, 2024, 2025
- Mentor, Student Networking Session with Senior Faculty & Industry Leaders, NeurIPS 2023
- Mentor, Student Mentorship Roundtable, ACML 2022
- Speaker, ACM iKDD Personal Journeys, 2022
- Mentor, Student Mentorship Program, ICLR 2021

Other

- Fulbright-Nehru Postdoctoral Fellowships (STEM) National Selection Committee, 2026-27
- Member, Sectional Committee-II (Computer Engineering and Information Technology), Indian National Academy of Engineering (INAE), 2026
- Selection Committee for INAE Young Innovator & Entrepreneur Award, 2025, 2026
- J C Bose Research Grant Evaluation Committee, 2025
- Fulbright-Nehru Academic and Professional Excellence Fellowships (STEM) National Selection Committee, 2024-25
- Faculty Recruitment Committees: IIT-Delhi, 2024; IIITDM-Kurnool, 2025
- Member, Empowered Committee for Industry & International Collaborations (ECIIC: Advanced Computing Theme), Ministry of Education, Govt of India, 2024
- Guest Faculty, International School of Business (ISB), Hyderabad, 2021
- Scientific Program Committee, NCPS Technology Innovation Hub on Data-driven Technologies, 2021-present
- National Coordinator, AI/ML Vertical, Vaibhav Summit, 2020
- Member, Telangana AI Mission, Working Group on Agriculture, 2020
- Academic Auditing Committee, Department of Systems and Computational Biology, University of Hyderabad, 2020-21
- Board of Studies member, PSG College of Technology, 2021 - present; Advisory Committee member, PSGTech Cognitive Computing lab, 2020-present
- Adjunct Faculty, Department of Mathematics and Computer Science, Sri Sathya Sai Institute of Higher Learning, 2019-present
- Secretary, AAAI India Chapter, 2017 - present
- Board of Studies Member, Amrita Vishwa Vidyapeetham, Chaitanya Bharathi Institute of Technology, 2019 - present
- CISE Panelist, US National Science Foundation, 2012

- Adjunct Faculty, Department of Mathematics and Computer Science, Sri Sathya Sai Institute of Higher Learning, 2019 - present
- Faculty Recruitment Committee, IIIT Sri City, Chittoor, 2014-17
- Digital Ocean Committee, Indian National Centre for Ocean Information Services (INCOIS), 2016-18
- Special Awards Judge, Intel International Science and Engineering Fair, 2013
- Reviewer, Nanyang Technological University MOE Academic Research Fund (AcRF), Singapore, 2012
- Reviewer, Natural Sciences and Engineering Research Council (NSERC), Canada, 2012
- NASA Motivating Undergraduates in Science and Technology (MUST) Program Mentor, 2009-10

Institution Building

- IITH Vision 2047 Committee, IIT-H, Sep 2024-present
- (Founding) Head, Department of Artificial Intelligence, 2019-2022
- Coordinator, MTech in Data Science program for working professionals, 2025-present
- Academic Review Committee, IIT-H, Dec 2022-present
- IITH Vision 2030 Committee, 2022-2024
- Research Advisory Committee, IIT-H, 2020-2024
- Faculty Incharge, ACM IITH Chapter, 2020-present
- Department Post Graduate Committee, CSE, IIT-H, (Chair) 2023-present; (Member) 2018-23
- Department Faculty Search Committee, AI, IIT-H, 2021-present
- Member, IIT-H Academic Senate, 2018-2022
- Department Faculty Search Committee, CSE, IIT-H, 2020-22, 2024-present
- Department and Institute Timetable committee, 2018-19
- NSM Benchmark Evaluation committee, IIT-H, 2017-18
- Data Management Policy committee, IIT-H, 2017-19
- Medical Benefit Scheme committee, IIT-H, 2017-19
- Computer Center Coordination Committee, IIT-Bhilai, 2016-2018
- Executive MTech in Data Science Faculty, IIT-H, 2015-present
- MTech Admissions Committee, Computer Science and Engg, IIT-H, 2015-2018
- Coordinator, i.school at IIT-H, 2014-2017

Professional Memberships

- **Senior Member**, Institute of Electrical and Electronics Engineers (IEEE), Association for the Advancement of Artificial Intelligence (AAAI)
- **Member**, Association of Computing Machinery (ACM)

TUTORIALS/SHORT COURSES/INVITED TALKS (Selected)

- *Learning Beyond Prediction: Concepts, Logic, and Reasoning*, Keynote Talk at [AIMLSys](#), Oct 2025; IIT Madras BS in Data Science Paradox Event, Jun 2026; Max Planck Institute Saarbrücken, Apr 2026
- *Beyond Catastrophic Forgetting: Taking Continual Learning to the Wild*, Keynote Talk at [CoLLAs](#), Aug 2025
- *Teaching AI Models to Forget: Fundamentals, Advances, and Challenges in Machine Unlearning*, Invited Talk at Flipkart, Jan 2025; Keynote Talk at AI@Walmart, Apr 2025
- *Expanding the Horizons of Continual Learning: Integrating Explainability and Privacy-Awareness*, Keynote Talk at CLVISION Workshop at CVPR 2024, Jun 2024
- *Moving Beyond an Afterthought: Toward Learning via Explanations*, Keynote Talk at XAI4CV Workshop at CVPR 2024, Jun 2024
- *AI/ML: Imperatives, Opportunities, Threats*, National Technology Day at Indian National Academy of Engineers, May 2024
- *Going Beyond the Known: Detecting Unknown Categories in Computer Vision*, IIT-Bombay, Apr 2024
- *Moving Beyond an Afterthought: Toward Learning via Explanations*, Microsoft Research, Feb 2024
- *Looking into the Crystal Ball of AI*, Invited Talk for National Science Day, Apollo Medical College, Feb 2024

- *The (He)Art of Research*, Invited Talk, ACM IIT-H Chapter, Nov 2023
- *Fairness: A Special Case of Explainability*, Invited Talk, Google Research BiNDI (Biases in NLP models and Data for the Indian Context) Summit, Oct 2023
- *Generative AI: Introduction and Opportunities*, Invited Talk, Chief Analytics Officers' Forum, Institute for Development and Research in Banking and Technology, Sep 2023
- *Going Beyond Continual Learning: Towards Organic Lifelong Learning*, Invited Talk, State University of New York at Buffalo (SUNY-Buffalo), May 2023
- *Causality in Explainable AI: Motivation and Methods*, Invited Talk, Purdue University, Apr 2023 + Carnegie Mellon University, Feb 2023
- *Memory, Invariance and Reasoning: Pillars of the Causal Continual Bridge*, Invited Talk, AAAI 2023 Workshop on Continual Causality, Feb 2023
- *Moving from Post-hoc to Ante-hoc Explainability in Deep Learning Models*, Invited Talk, Microsoft Research-IISc-UPenn Workshop on Trustworthy AI, Jan 2023
- *Going Beyond Continual Learning: Towards Organic Lifelong Learning*, Invited Talk, Amex AI Labs, Oct 2022 + Amazon Research Days, Nov 2022
- *Causal Perspectives in Neural Network Explanations*, Invited Talk, Banff International Workshop on Interpretability in Artificial Intelligence, Banff, Canada, May 2022
- *Deep Learning with Limited Labeled Data Recent Trends and Challenges*, Plenary Talk, Winter School on Deep Learning, ISI-Kolkata, Mar 2022
- *Quo Vadis, AI?* Invited Talk, Engineers Week, Carrier Corporation, Feb 2022
- *Explainability in Deep Learning*, Invited Tutorial, ACM International Conference on Data Science & Management of Data (CODS-COMAD), Jan 2022
- *On Connections between Explainability and Robustness in Neural Network Models*, Indo-French Knowledge Summit 3, Nov 2021
- *Explaining Neural Networks: A Causal Perspective*, IIT-Palakkad Data Science Seminar Series Inaugural Lecture, Aug 2021
- *Explaining Neural Networks: A Causal Perspective*, Tea Talks at Montreal Institute of Learning Algorithms (MILA), Feb 2021
- *Deep Learning: An Introduction and Recent Trends*, Indian Space Research Organization (ISRO) Inertial Systems Unit, Feb 2021
- *Explaining Neural Networks: A Causal Perspective*, Invited Session, NVIDIA GPU Technology Conference (GTC), Oct 2020
- *Introduction to Deep Learning and its Applications*, INS Valsura Webinar on AI for Data-Driven Navy, Indian Navy, Oct 2020
- *Regulations for Responsible AI and Explainable AI*, RAISE Summit (organized by NITI Aayog, Govt of India), Oct 2020
- *Towards Explainable and Robust AI Practice*, CII-IITH Power Talks 2.0 and Tech Edu Forum, Oct 2020
- *AI/ML for Computer Vision and Explainable AI*, Tutorial at Qualcomm, Hyderabad, Jun-Sep 2020
- *Towards Explainable AI*, NPTEL Live Series (Online), Apr 2020
- *Learning from Limited Labeled Data*, Microsoft AI and Research & Facebook AI Research, CA, USA, Feb 2020
- *Zero-shot Task Transfer*, CVPR AC Workshop, San Diego, Feb 2020
- *Explaining Neural Networks: A Causal Perspective*, Microsoft Research-LinkedIn-IISc FATE-ML Workshop, Bangalore, Jan 2020
- *AI for Agriculture*, Google Research Workshop on AI for Social Good, Bangalore, Nov 2019
- *Towards Solving Next-Gen ML Problems: Learning with Weak Supervision*, Keynote Talk, KLA Neoterix Conference, Chennai, Sep 2019
- *Towards Explainable Deep Learning*, AIST AIRC International Workshop, Tokyo, Feb 2019

- *Explainability in Machine/Deep Learning*, IBM India Research Labs, Bangalore, Dec 2018
- *Towards Solving Next-Gen ML Problems: Learning with Weak Supervision*, Intel ICTAI Workshop, Bangalore, Nov 2018
- *Machine Learning for Agriculture*, Keynote Talk, International Workshop on Machine Learning for Cyber-Agricultural Systems (MLCAS2018), Mumbai, Oct 2018
- *Adversarial Data Programming: Using GANs to Relax the Bottleneck of Curated Labeled Data*, ACCV Area Chairs Workshop, Nanyang Technological University, Sep 2018
- *Going beyond what and asking why: Explainability in Machine/Deep Learning*, Anthill Inside 2018, Bangalore, Jul 2018
- *Deep Generative Models for Annotated Image/Video Creation*, NEC Labs, Cupertino, Mar 2018
- *Explainability in Deep Learning: Grad-CAM++*, Google AI/ML Workshop, Bangalore, Mar 2018
- *Deep Learning: A Review*, Invited Talk, ACM-Microsoft Research Academic Summit on AI, Hyderabad, Jan 2018
- *Applied Machine Learning*, Tutorial at Honeywell Aerospace, Bangalore, Aug-Nov 2018
- *Sync-DRAW: Video Generation using Deep Recurrent Architectures*, IIT-Kanpur, Apr 2017
- *Sync-DRAW: Video Generation using Deep Recurrent Architectures*, Mysore Park Workshop on Vision, Language and AI, Dec 2016
- *Deep Learning for Big Data*, Continuing Education Programme at ANURAG, DRDO, Hyderabad, Sep 2016
- *Deep Learning*, Tutorial provided to employees of Centre for Development of Advanced Computing (CDAC, a Govt of India R&D organization) employees across India, Hyderabad, Aug 2016
- *Visual Intelligence and Learning*, Indo-Norwegian Workshop on ICT, Hyderabad, Jun 2016
- [*Conformal Prediction for Reliable Machine Learning: Theory, Adaptations and Applications*](#), Tutorial presented at European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2014), Nancy, France, Sep 2014
- *Active Learning for Multimedia Content Analysis*, Tutorial presented at IEEE International Conference on Multimedia and Expo (ICME), San Jose, CA, Jul 2013
- *Towards Socio-Behavioral Intelligence: Machine Learning Methods and Applications*, Royal Holloway University of London, UK, Dec 2012
- *Machine Learning for Human-centered Multimedia Computing: Inspirations from Assistive and Rehabilitative Technologies*, Indian Institute of Technology, Madras, India, Oct 2011
- *Conformal Predictions for Reliable Machine Learning: Theory and Applications*, Tutorial presented at National Conference on Artificial Intelligence (AAAI), San Francisco, USA, Aug 2011

OTHER/TRAVEL GRANTS

- *Science and Engineering Research Board International Travel Support grant*, Department of Science and Technology, Govt of India, European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), 2014.
- *ASU GPSA Student Travel Grant*, 9th International Conf on Machine Learning and Applications, 2010.
- *Student Travel Award*, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2010.
- *Multimodal Interactive Kiosk*, Senior Design Project Funding Award, Fulton School of Engineering, Arizona State University, USA, Lead Investigator, Aug- Dec 2009, USD \$450 (Student Project)
- *Student Travel Award and ASU GPSA Student Travel Grant*, 12th IEEE International Conference on Computer Vision (ICCV), 2009.
- *Head Analytics: An Analytical Software for Head and Face Movements*, Senior Design Project Funding Award, Fulton School of Engineering, Arizona State University, USA, Lead Investigator, Jan 2009 - May 2009, USD \$350 (Student Capstone Project)
- *Graduate College Conference Travel Grant Award*, 21st IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008.

PUBLICATIONS/PATENTS³ (H-index: 46, Citations: 13833)**Summary of Patents & Publications
(All peer-reviewed)**Total Number of Publications (Peer-reviewed): 222Books: 1Journals/Book Chapters: 26CORE A/A* Conferences: 94Other Conferences/Workshops: 102Patent Applications: 10; Patents Granted: 5**PATENTS**

- [P.10] Abhay Bhandarkar, Gongjie Qi, Bala Kumaravel, Vineeth N Balasubramanian, Computationally-efficient Raster Image Decomposition into Editable Layers, US Patent Application (filed in Apr 2026)
- [P.9] Vaishnavi Khindkar, Chetan Arora, Rohit Saluja, Anbumani Subramanian, Vineeth N Balasubramanian, C V Jawahar, System and Method for Instance-Specific Feature Alignment for Reducing Domain Distance between Source and Target, Indian Patent Application No. 202241027805 (filed in May 2022); System and Method for Detecting Object in an Adaptive Environment Using a Machine Learning Model, US Patent Application No 18/197,075 (filed in May 2023, **granted in Jun 2025**)
- [P.8] Shyam Nandan Rai, Chetan Arora, Rohit Saluja, Vineeth N Balasubramanian, C V Jawahar, System and Method for Generating Derained Image using Self-Supervised Learning Model, Indian Patent Application No. 202241023945 (filed in Apr 2022), US Patent Application No 18/138,060 (filed in Apr 2023, **granted in Apr 2026**).
- [P.7] Chaitanya Devaguptapu, Ninad Akolekar, Manuj Sharma, Vineeth N Balasubramanian, Method For Object Detection In Thermal Images Using Data-Rich Domains And An Object Detector Thereof, Indian Patent Application No. 202011032663 (filed in Aug 2020, **granted in Dec 2025**)
- [P.6] Parikshit S., Vineeth N Balasubramanian, P.J. Narayanan, SYSTEM AND METHOD OF REFOCUSING A CAPTURED IMAGE, Indian Patent Application No. 201941042927 (filed in Oct 2019).
- [P.5] Vineeth N Balasubramanian, Thirumaran Ekambaram, Sivaram Annadurai, Sathiyarayanan Sampath, Method and Electronic Device for Gender Detection of Humans in One or more Images, Indian Patent No 448902 (Application No. 201841015128, filed in Apr 2018, **granted in 2023**).
- [P.4] Raghu S Iyengar, Vineeth N Balasubramanian, Shuffling of Input Data for Mini-Batch Gradient Descent Based Methods, Indian Patent Application No. 201641013266 (filed in Apr 2016), US Patent Application No 15/486,787 (filed in Apr 2017, **granted in Nov 2020**).
- [P.3] V. Balasubramanian, S. Chakraborty, S. Panchanathan, On The Usefulness of the Largest Eigenvalue of the P-Value Difference Matrix in Conformal Predictors As a Measure of Discrepancy in Learning Systems, US Provisional Patent Application No 61/802,045.
- [P.2] S. Chakraborty, V Balasubramanian, S Panchanathan, Active Batch Selection for Training a Data Classifier with Guaranteed Performance Bounds, US Provisional Application No 61/740,315.
- [P.1] S. Chakraborty, V Balasubramanian, S Panchanathan, Apparatus, System and Method for Adaptive Batch Mode Active Learning for Evolving a Classifier, US Patent Application No 13/484,696.

BOOKS

- [B.1] V. N. Balasubramanian, S-S. Ho, V. Vovk, Conformal Predictions for Reliable Machine Learning: Theory, Adaptations and Applications, *Insights Series*, Morgan Kaufmann Publ. (Elsevier), May

³ Please see <http://scholar.google.com/citations?user=7soDcboAAAAJ> for the complete list of citations.

REFEREED JOURNALS/BOOK CHAPTERS

- [JB.26] Rahul Vigneswaran, Hari Chandana K, Vineeth N. Balasubramanian, Transitioning Heads Conundrum: The Hidden Bottleneck in Long-Tailed Class-Incremental Learning, *Transactions of Machine Learning Research*, Apr 2026.
- [JB.25] Christian Stavan, Kunal Tilaganji, Sai Mathura Krishnan, Sai Srinivas Kancheti, Vineeth N. Balasubramanian, Conformal Prediction in the Age of Multimodal Foundation Models: A Survey, In: An Nguyen, K., Luo, Z. (eds) *The Importance of Being Learnable. Lecture Notes in Computer Science*, vol 16290. Springer, Cham. https://doi.org/10.1007/978-3-032-15120-9_13.
- [JB.24] Hari Chandana Kuchibhotla, Sai Srinivas Kancheti, Abbavaram Gowtham Reddy, Vineeth N. Balasubramanian, Efficient Vocabulary-Free Fine-Grained Visual Recognition in the Age of Multimodal LLMs, *Transactions of Machine Learning Research*, Aug 2025.
- [JB.23] Sai Srinivas Kancheti, Rahul Vigneswaran, Bamdev Mishra, Vineeth N. Balasubramanian, HARE: Human-in-the-Loop Algorithmic Recourse, *Transactions of Machine Learning Research*, Mar 2025. <https://openreview.net/forum?id=56EBglCFvx>
- [JB.22] Hari Chandana Kuchibhotla, Sai Srinivas Kancheti, Abbavaram Gowtham Reddy, Vineeth N. Balasubramanian, Semantic Alignment for Prompt-Tuning in Vision Language Models, *Transactions of Machine Learning Research*, Jan 2025. <https://openreview.net/forum?id=avDr56QjSl> (Also presented at the Workshop on Adaptive Foundation Models: Evolving AI for Personalized and Efficient Learning, NeurIPS'24)
- [JB.21] Thrupthi Ann John, V. Balasubramanian, C V Jawahar, Explaining Deep Face Algorithms through Visualization: A Survey, *IEEE Transactions on Biometrics, Behavior, and Identity Science*, Jan 2024, Vol 6:1, pg 15-29, 10.1109/TBIOM.2023.3319837 [Impact Factor: 5.81]
- [JB.20] Vineeth N Balasubramanian, Toward Explainable Deep Learning, *Communications of the ACM (India Region Special Issue)*, Vol. 65 No. 11, pg 68-69, Nov 2022, <https://doi.org/10.1145/3550491> [Impact Factor: 14.06]
- [JB.19] Shivangana R, Akshay Chandra, Sai Vikas D., V. Balasubramanian, S. Ninomiya, Wei Guo, How Useful Is Image-Based Active Learning for Plant Organ Segmentation? *Plant Phenomics (Science Partner Journal)*, Feb 2022, doi: 10.34133/2022/9795275 [Impact Factor: 6.89]
- [JB.18] Puneet Mangla, Vedant Singh, Shreyas Havaladar, Vineeth Balasubramanian, On the Benefits of Defining Vicinal Distributions in Latent Space, *Elsevier Pattern Recognition Letters*, Vol 152, pg 382-390, Dec 2021, <https://doi.org/10.1016/j.patrec.2021.10.016> [Impact Factor: 4.75]
- [JB.17] K J Joseph, Jathushan Rajasegaran, Salman Khan, Fahad Shahbaz Khan, Vineeth N Balasubramanian, Incremental Object Detection via Meta-Learning, *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, Vol. 44, pp. 9209-9216, Oct 2021, 10.1109/TPAMI.2021.3124133 [Impact Factor: 24.31]
- [JB.16] Thrupthi A John, V. Balasubramanian, C V Jawahar, Canonical Saliency Maps: Decoding Deep Face Models, *IEEE Transactions on Biometrics, Behavior, and Identity Science*, Vol. 3, Issue 4, pg 561 - 572, Oct 2021, doi: 10.1109/TBIOM.2021.3120758 [Impact Factor: 5.81]
- [JB.15] Ajay Kumar, Sai Vikas Desai, V. Balasubramanian, Wei Guo, Seishi Ninomiya, Uday Desai, P Rajalakshmi, Efficient Maize Tassel-Detection Method using UAV based Remote Sensing, *Elsevier Remote Sensing Applications: Society and Environment*, Vol. 23, Aug 2021, <https://doi.org/10.1016/j.rsase.2021.100549> [Impact Factor: 4.93]
- [JB.14] Sneha Kudugunta, Vaibhav B Sinha, Adepu Ravi Sankar, Surya Teja Chavali, Purushottam Kar, Vineeth N Balasubramanian, DANTE: Deep AlterNations for Training nEural networks, *Elsevier Neural Networks*, Vol. 131, pg 127-143, Nov 2020, <https://doi.org/10.1016/j.neunet.2020.07.026> [Impact Factor: 9.65]
- [JB.13] Akshay Chandra, Sai Vikas D., S. Ninomiya, Wei Guo, V. Balasubramanian, Active Learning with Point Supervision for Cost-Effective Panicle Detection in Cereal Crops, *BMC Plant Methods*, Vol.

16: 34, Mar 2020, <https://doi.org/10.1186/s13007-020-00575-8>. [Impact Factor: 5.82]

- [JB.12] Chandra, A.L., Desai, S. V., Balasubramanian, V. N., Guo, W, Computer Vision with Deep Learning for Plant Phenotyping in Agriculture: A Survey, *Journal of Advanced Computing and Communications*, Apr 2020
- [JB.11] Sai Vikas Desai, V. Balasubramanian, T. Fukatsu, S. Ninomiya, Wei Guo, Automatic estimation of heading date of paddy rice using deep learning, *BMC Plant Methods*, Vol. 15:76, Jul 2019, <https://doi.org/10.1186/s13007-019-0457-1> [Impact Factor: 5.82]
- [JB.10] Lovish Chum, Anbumani S., V. Balasubramanian, C. V. Jawahar, Beyond Supervised Learning: A Computer Vision Perspective, *Journal of the Indian Institute of Science*, Vol 99, pp 177-199, Feb 2019, <https://doi.org/10.1007/s41745-019-0099-3>.
- [JB.9] N. Agarwal, V. Balasubramanian, C.V. Jawahar, Improving Multiclass Classification by Deep Networks using DAGSVM and Triplet Loss, *Elsevier Pattern Recognition Letters*, Vol. 112, pg 184-190, Sep 2018, <https://doi.org/10.1016/j.patrec.2018.06.034> [Impact Factor: 4.75]
- [JB.8] S. Chakraborty, V. Balasubramanian, Q. Sun, S. Panchanathan, J. Ye, Active Batch Selection via Convex Relaxations with Guaranteed Solution Bounds, *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, Vol 37:10, pg 1945-1958, Jan 2015, doi: 10.1109/TPAMI.2015.2389848. [Impact Factor: 24.31]
- [JB.7] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Adaptive Batch Mode Active Learning, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, Vol. 26:8, pg 1747-1760, Sep 2014, doi: 10.1109/TNNLS.2014.2356470. [Impact Factor: 14.26]
- [JB.6] V. Balasubramanian, S. Chakraborty, S. Panchanathan, Conformal Predictions for Information Fusion: A Comparative Study of P-Value Combination Methods, *Annals of Mathematics and Artificial Intelligence*, Vol. 74:1, pg 45-65, Jun 2015, <https://doi.org/10.1007/s10472-013-9392-4>. [Impact Factor: 1.1]
- [JB.5] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Generalized batch mode active learning for face-based biometric recognition, *Elsevier Pattern Recognition*, Vol. 46:2, pg 497-508, Feb 2013, <https://doi.org/10.1016/j.patcog.2012.07.025>. [Impact Factor: 7.19]
- [JB.4] S. Nataraju, V. Balasubramanian, S. Panchanathan, An Integrated Approach to Visual Attention Modeling for Saliency Detection in Videos, In *Machine Learning for Vision-based Motion Analysis: Advances in Pattern Recognition*, Part 3, pp 181-214, Liang Wang, Guoying Zhao, Li Cheng, Matti Pietikäinen (Eds.), Springer-Verlag London, 2011.
- [JB.3] V. Balasubramanian, S. Panchanathan, Biased Manifold Embedding: Supervised Isomap for Person-Independent Head Pose Estimation, In *Computer Vision and Computer Graphics: Theory and Applications*, Vol 21, pp 177-188, José Braz, Alpesh Ranchordas, Hélder J. Araújo, João Madeiras Pereira (Eds.), Springer Berlin Heidelberg, 2009.
- [JB.2] S. Krishna, V. Balasubramanian, J. Black, S. Panchanathan, Person-Specific Characteristic Feature Selection for Face Recognition, *Biometrics: Theory, Methods, and Applications*, pp 113-141, N. V. Boulgouris, K. N. Plataniotis and E. Micheli-Tzanakou (Eds.), Wiley Publications, 2008.
- [JB.1] V. Balasubramanian, S. Krishna, S. Panchanathan, Person-independent head pose estimation using biased manifold embedding, *EURASIP Journal on Advanced Signal Processing*, pg 63:1-63:15, Hindawi Publishing Corporation, 2008. [Impact Factor: 1.73]

REFEREED CONFERENCE/WORKSHOP PROCEEDINGS

TOP-TIER CONFERENCE PROCEEDINGS⁴ (A*/A rated)

- [C.1.94] Sai Srinivas Kancheti, Aditya Sanjiv Kanade, Rohit Sinha, Vineeth N Balasubramanian, Tanuja Ganu, Faithful GRPO: Improving Visual Spatial Reasoning in Multimodal Language Models via

⁴ Highly selective conferences in computer science that often exceed journals in selectivity, visibility, and impact. Please see [here](#) for a study comparing conference papers and journal articles in related areas

Constrained Policy Optimization, Third Conference on Language Modeling (COLM'26), Oct 2026

- [C.1.93] Rohit Sinha, Kunal Tilaganji, Tanuja Ganu, Nagarajan Natarajan, Amit Sharma, Vineeth N Balasubramanian, VERDICT: Training-Free Step-Wise Verification of Multimodal Reasoning via Disagreement-Aware Consensus, Proceedings of European Conference on Computer Vision (ECCV'26), Sep 2026 (Also presented at Workshop on on AI Verification in the Wild, ICLR'26)
- [C.1.92] Sairam VCR, Varun Gopal, Poornima Jain, Vineeth N Balasubramanian, Muhammad Haris Khan, Real-Time Source-Free Object Detection, Proceedings of European Conference on Computer Vision (ECCV'26), Sep 2026
- [C.1.91] Swarnim Maheshwari, Syed Imam Ali, Vineeth N Balasubramanian, Beyond Fixed Luminance: Towards Panchromatic and Orthochromatic Image Colorization, Proceedings of European Conference on Computer Vision (ECCV'26), Sep 2026
- [C.1.90] Deepika Vemuri, Sayanta Adhikari, Ankit Saha, Krishn Vishwas Kher, Vineeth N Balasubramanian, Formal Concept Lattices are Good Semantic Scaffolds for Concept-Based Learning, Proceedings of International Conference on Machine Learning (ICML'26), Jul 2026
- [C.1.89] Sai Srinivas Kancheti, Aditya S Kanade, Vineeth N Balasubramanian, Tanuja Ganu, Chain-of-Thought Degrades Visual Spatial Reasoning Capabilities of Multimodal LLMs, Proceedings of the Association of Computational Linguistics (ACL'26), Jul 2026
- [C.1.88] Rohit Sinha, Aditya S Kanade, Sai Srinivas K, Vineeth N Balasubramanian, Tanuja Ganu, Mind's Eye: A Benchmark of Visual Abstraction, Transformation and Composition for Multimodal LLMs, Proceedings of the Association of Computational Linguistics (ACL'26), Jul 2026
- [C.1.87] Bhuvan Sachdeva, Karan Uppal, Abhinav Java, Vineeth N Balasubramanian, Understanding Task Transfer in Vision-Language Models, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'26), Jun 2026 (Oral Paper, Top 0.8%) (Also presented at Workshop on Unifying Representations in Neural Models, NeurIPS'25)
- [C.1.86] Sarthak Mehrotra, Sairam VCR, Mani Hemanth Reddy Bonthu, Vineeth N Balasubramanian, iSHIFT: Lightweight Slow-Fast GUI Agent with Adaptive Perception, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'26), Jun 2026
- [C.1.85] Sairam VCR, Rishabh Lalla, Aveen Dayal, Tejal Kulkarni, Anuj Lalla, Vineeth N Balasubramanian, Muhammad Haris Khan, Foundation Model Priors Enhance Object Focus in Feature Space for Source-Free Object Detection, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'26), Jun 2026
- [C.1.84] Arnav Devalapally, Poornima Jain, Kartik Srinivas, Vineeth N Balasubramanian, Source Models Leak What They Shouldn't: Unlearning Zero-Shot Transfer in Domain Adaptation Through Adversarial Optimization, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'26), Jun 2026
- [C.1.83] Megha Mariam K M, Vineeth N Balasubramanian, C V Jawahar, Unifying Scientific Communication: Fine-Grained Correspondence Across Scientific Media, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition Findings Workshop (CVPR Findings'26), Jun 2026
- [C.1.82] Deepika SN Vemuri, Gautham Bellamkonda, Aditya Pola, Vineeth N Balasubramanian, LogicCBMs: Logic-Enhanced Concept-Based Learning, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'26), Mar 2026
- [C.1.81] Shaunak Halbe, Junjiao Tian, K J Joseph, James Smith, Katherine Stevo, Vineeth N Balasubramanian, Zsolt Kira, Grounding Descriptions in Images informs Zero-Shot Visual Recognition, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'26), Mar 2026

- [C.1.80] Susmit Agrawal, Krishn Vishwas Kher, Saksham Mittal, Swarnim Maheshwari, Vineeth N. Balasubramanian, Memory-Integrated Reconfigurable Adapters: A Unified Framework for Settings with Multiple Tasks, Proceedings of Neural Information Processing Systems (**NeurIPS'25**), Dec 2025
- [C.1.79] Pushkar Shukla, Aditya Chinchure, Emily Diana, Alexander Tolbert, Kartik Hosanagar, Vineeth N. Balasubramanian, Leonid Sigal, Matthew A. Turk, Mitigate One, Skew Another? Tackling Intersectional Biases in Text-to-Image Models, Proceedings of the Findings of Conference on Empirical Methods in Natural Language Processing (**EMNLP'25 Findings**), Nov 2025
- [C.1.78] Thrupthi Ann John, Vineeth N Balasubramanian, C V Jawahar, DashGaze: Driver Gaze Through Dashcam, Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS'25**), Oct 2025 ([Oral Paper](#))
- [C.1.77] Shivam Chandhok, Wan-Cyuan Fan, Vered Shwartz, Vineeth N Balasubramanian, Leonid Sigal, Response Wide Shut: Surprising Observations in Basic Vision Language Model Capabilities, Proceedings of the Association of Computational Linguistics (**ACL'25**), July 2025
- [C.1.76] Aniket Vashishtha, Abhinav Kumar, Atharva Pandey, Abbavaram Gowtham Reddy, Kabir Ahuja, Vineeth N. Balasubramanian, Amit Sharma, Teaching Transformers Causal Reasoning through Axiomatic Training, Proceedings of International Conference on Machine Learning (**ICML'25**), Jul 2025 (*Also presented at the Workshop on Causality and Large Models, NeurIPS'24*)
- [C.1.75] Shilhora Akshay, Niveditha Lakshmi Narasimhan, Jacob George, Vineeth N Balasubramanian, A Unified Latent Schrödinger Bridge Diffusion Model for Unsupervised Anomaly Detection and Localization, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR'25**), Jun 2025
- [C.1.74] Sanchayan Santra, Vishal Chudasama, Pankaj Wasnik, Vineeth N Balasubramanian, Precise Event Spotting in Sports Videos: Solving Long-Range Dependency and Class Imbalance, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR'25**), Jun 2025
- [C.1.73] Aniket Vashishtha, Abbavaram Gowtham Reddy, Abhinav Kumar, Saketh Bachu, Vineeth N Balasubramanian, Amit Sharma, Causal Order: The Key to Leveraging Imperfect Experts in Causal Inference, International Conference on Learning Representations (**ICLR'25**), May 2025 (*Also presented at the Workshop on Causality and Large Models, NeurIPS'24*)
- [C.1.72] Susmit Agrawal, Deepika Vemuri, Sri Siddarth Chakaravarthy P, Vineeth N Balasubramanian, Walking the Web of Concept-Class Relationships in Incrementally Trained Interpretable Models, Proceedings of the Association for the Advancement of Artificial Intelligence (**AAAI'25**), Feb 2025
- [C.1.71] A Gowtham Reddy, Vineeth N Balasubramanian, Detecting and Measuring Confounding Using Causal Mechanism Shifts, Proceedings of Neural Information Processing Systems (**NeurIPS'24**), Dec 2024
- [C.1.70] Aveen Dayal, Rishabh Lalla, Vineeth N Balasubramanian, Shugao Ma, Fernando de la Torre, Improving Unsupervised Domain Adaptation: A Pseudo-Candidate Set Approach, Proceedings of European Conference on Computer Vision (**ECCV'24**), Oct 2024
- [C.1.69] Prachi Garg, Joseph K J, Vineeth N Balasubramanian, Shugao Ma, Fernando de la Torre, Adapting Human Action Models to New User Categories over Time, Proceedings of European Conference on Computer Vision (**ECCV'24**), Oct 2024
- [C.1.68] Vaishnavi Khindkar, Vineeth N Balasubramanian, Chetan Arora, Anbumani Subramanian, C V Jawahar, Can Reasons Help Improve Pedestrian Intent Estimation? A Cross-Modal Approach, IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS'24**), Oct 2024
- [C.1.67] Sairam Rebbapragada, Pranoy Panda, Vineeth N Balasubramanian, C2FDrone: Coarse-to-Fine Drone-to-Drone Detection using Vision Transformer Networks, Proceedings of the IEEE

- [C.1.66] A Gowtham Reddy, Vineeth N Balasubramanian, NESTER: An Adaptive Neurosymbolic Method for Causal Effect Estimation, Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI'24), Feb 2024
- [C.1.65] A Gowtham Reddy, Saketh Bachu, Harsharaj Pathak, Varshaneya V, Satyanarayana Kar, Vineeth N Balasubramanian, Towards Learning and Explaining Indirect Causal Effects in Neural Networks, Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI'24), Feb 2024
- [C.1.64] Sandesh Kamath, Amit Deshpande, Vineeth N Balasubramanian, Rethinking Robustness of Model Attributions, Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI'24), Feb 2024
- [C.1.63] Bhat Dittakavi, Vikas Desai, Kamakshi Callepalli, Aleti Vardhan, Vineeth N Balasubramanian, CARE: Counterfactual-based Algorithmic Recourse for Explainable Pose Correction, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'24), Jan 2024
- [C.1.62] Hiran Sarkar, Vishal Chudasama, Naoyuki Onoe, Pankaj Wasnik, Vineeth N Balasubramanian, Open-set Object Detection By Aligning Known Class Representations, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'24), Jan 2024,
- [C.1.61] Gaurav Bhatt, Deepayan Das, Leonid Sigal, Vineeth N. Balasubramanian, Mitigating the Effect of Incidental Correlations on Part-based Learning, Proceedings of Neural Information Processing Systems (NeurIPS'23), Dec 2023, DOI: 10.48550/arXiv.2310.00377
- [C.1.60] Aveen Dayal, Vimal K B, Linga Reddy Cenkeramaddi, C Krishna Mohan, Abhinav Kumar, Vineeth N. Balasubramanian, Margin-based Adversarial Learning for Domain Generalization, Proceedings of Neural Information Processing Systems (NeurIPS'23), Dec 2023, DOI: 10.48550/arXiv.2311.08503
- [C.1.59] Vimal K B, Saketh Bachu, Tanmay Garg, Niveditha Lakshmi Narasimhan, Raghavan Konuru, V Balasubramanian, Building a Winning Team: Selecting Source Model Ensembles using a Submodular Transferability Estimation Approach, Proceedings of IEEE International Conference on Computer Vision (ICCV'23), Oct 2023
- [C.1.58] Shubhra Aich, Jesus Ruiz-Santaquiteria, Prachi Garg, Zhenyu Lu, Joseph K J, Alvaro Fernandez Garcia, Kenrick Kin, Chengde Wan, Vineeth N Balasubramanian, Necati Cihan Camgoz, Shugao Ma, Fernando de la Torre, Data-Free Class-Incremental Hand Gesture Recognition, Proceedings of IEEE International Conference on Computer Vision (ICCV'23), Oct 2023,
- [C.1.57] Gaurav Bhatt, V N Balasubramanian, Learning Style Subspaces for Controllable Unpaired Domain Translation, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'23), pg 4220-4229, Jan 2023, DOI: 10.1109/WACV56688.2023.00420
- [C.1.56] Rebbapragada VC Sairam, Monish Keswani, Uttaran Sinha, Nishit Shah, V N Balasubramanian, ARUBA: An Architecture-Agnostic Balanced Loss for Aerial Object Detection, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'23), pg 3719-3728, Jan 2023, DOI: 10.1109/WACV56688.2023.00371
- [C.1.55] Joseph K J, Sujoy Paul, Piyush Rai, Soma Biswas, Gaurav Aggarwal, V Balasubramanian, Novel Class Discovery without Forgetting, Proceedings of European Conference on Computer Vision (ECCV'22), pg 570-586, Oct 2022, DOI: 10.1007/978-3-031-20053-3_33
- [C.1.54] Arjun Ashok, Joseph K J, V Balasubramanian, Class-Incremental Learning with Cross-Space Clustering and Controlled Transfer, Proceedings of European Conference on Computer Vision (ECCV'22),pg 105-122, Oct 2022, DOI: 10.1007/978-3-031-19812-0_7 (Also presented at Workshop on Continual Learning in Computer Vision, IEEE-CVF Conference on Computer Vision and Pattern Recognition (CVPRW'22), Jun 2022)

- [C.1.53] Surjan Jandial, Yash Khasbage, Arghya Pal, V Balasubramanian, Distilling the Undistillable: Learning from a Nasty Teacher, Proceedings of European Conference on Computer Vision (ECCV'22), pg 587-603, Oct 2022, DOI: 10.1007/978-3-031-19778-9_34
- [C.1.52] Deepak Kumar Singh, Shyam Nandan Rai, Joseph K J, Rohit Saluja, V N Balasubramanian, Chetan Arora, Anbumani Subramanian, C V Jawahar, New Objects on the Road? No Problem, We'll Learn Them Too, Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'22), pg 1972-1978, Oct 2022, DOI: IROS47612.2022.9981886
- [C.1.51] Sai Srinivas K*, A Gowtham Reddy*, Amit Sharma, V. Balasubramanian, Matching Learned Causal Effects of Neural Networks with Domain Priors, Proceedings of International Conference on Machine Learning (ICML'22), pg 10676-10696, Jul 2022, DOI: 10.48550/arXiv.2111.12490
- [C.1.50] Anirban Sarkar, Anindya Sarkar, Deepak Vijayakeerthy, V. Balasubramanian, A Framework for Learning Ante-hoc Explainable Models via Concepts, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), pg 10286-10295, Jun 2022, DOI: 10.1109/CVPR52688.2022.01004
- [C.1.49] Joseph K J, Salman Khan, Fahad Khan, V. Balasubramanian, Energy-based Latent Aligner for Incremental Learning, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), pg 7452-7461, Jun 2022, DOI: 10.1109/CVPR52688.2022.00730
- [C.1.48] Hari Chandana K, Sumitra M, Shivam Chandhok, V. Balasubramanian, Unseen Classes at a Later Time? No Problem, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), pg 9245-9254, Jun 2022, DOI: 10.1109/CVPR52688.2022.00903
- [C.1.47] Monish Keswani, Sriranjani R, Nishant Reddy S, V. Balasubramanian, Proto2Proto: Can you recognize the car, the way I do? Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), pg 10233-10243 Jun2022, DOI: 10.1109/CVPR52688.2022.00999
- [C.1.46] Piyushi Manupriya, Tarun Ram Menta, V. Balasubramanian, J Saketha Nath, Improving Attribution Methods by Learning Submodular Functions, Proceedings of International Conference on Artificial Intelligence and Statistics (AISTATS'22), pg 2173-2190, Mar 2022, DOI: 10.48550/arXiv.2104.09073
- [C.1.45] A Gowtham Reddy, Benin Godfrey, V. Balasubramanian, On Causally Disentangled Representations, Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI'22), pg 8089-8097, Feb 2022, DOI: 10.1609/aaai.v36i7.20781
- [C.1.44] Saloni Dash, V Balasubramanian, Amit Sharma, Evaluating and Mitigating Bias in Image Classifiers: A Causal Perspective Using Counterfactuals, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'22), pg 915-924, Jan 2022, DOI: 10.1109/WACV51458.2022.00393
- [C.1.43] Puneet Mangla, Shivam Chandhok, Vineeth N Balasubramanian, Fahad S Khan, COCOA: Context-Conditional Adaptation for Recognizing Unseen Classes in Unseen Domains, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'22), pg 865-874, Jan 2022, DOI: 10.1109/WACV51458.2022.00168
- [C.1.42] Anirban Sarkar, Anindya Sarkar, V. Balasubramanian, Leveraging Test-Time Consensus Prediction for Robustness against Unseen Noise, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'22), pg 1839-1848, Jan 2022, DOI: 10.1109/WACV51458.2022.00362 (Also presented at Workshop on Adversarial Robustness In The Real World, IEEE-CVF International Conference on Computer Vision (ICCVW'21), Oct 2021)
- [C.1.41] Puneet Mangla, Nupur Kumari, Mayank Singh, Balaji Krishnamurthy, Vineeth N Balasubramanian, Data InStance Prior (DISP) in Generative Adversarial Networks, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'22), pg 451-461, Jan 2022, DOI: 10.1109/WACV51458.2022.00353

- [C.1.40] Prachi Garg, Rohit Saluja, V N Balasubramanian, Chetan Arora, Anbumani S, C. V. Jawahar, Multi-Domain Incremental Learning for Semantic Segmentation, Proceedings of IEEE Winter Conference on Applications of Computer Vision (**WACV'22**), pg 761-771, Jan 2022, DOI: 10.1109/WACV51458.2022.00214
- [C.1.39] Shyam Nandan Rai, Chetan Arora, V N Balasubramanian, Anbumani S, Rohit Saluja, C. V. Jawahar, FLUID: Few-Shot Self-Supervised Image Deraining, Proceedings of IEEE Winter Conference on Applications of Computer Vision (**WACV'22**), pg 3077-3086, Jan 2022, DOI: 10.1109/WACV51458.2022.00049
- [C.1.38] Vaishnavi Khindkar, Chetan Arora, V N Balasubramanian, Anbumani S, Rohit Saluja, C. V. Jawahar, To mis-attend is to misalign! Residual Self-Attentive Feature Alignment for Adapting Object Detectors, Proceedings of IEEE Winter Conference on Applications of Computer Vision (**WACV'22**), pg 3632-3642, Jan 2022, DOI: 10.1109/WACV51458.2022.00045
- [C.1.37] Sandesh Kamath, Amit Deshpande, K V Subrahmanyam, V. Balasubramanian, Can we have it all? On the Trade-off between Spatial and Adversarial Robustness of Neural Networks, Proceedings of Neural Information Processing Systems (**NeurIPS'21**), pg 27462-27474, Dec 2021, DOI: 10.48550/arXiv.2002.11318
- [C.1.36] Anindya Sarkar, Anirban Sarkar, Sowrya Gali, V. Balasubramanian, Adversarial Robustness without Adversarial Training: A Teacher-Guided Curriculum Learning Approach, Proceedings of Neural Information Processing Systems (**NeurIPS'21**), pg 12836-12848, Dec 2021, DOI: 10.48550/arXiv.2111.00295
- [C.1.35] Joseph K J, Salman Khan, Fahad Khan, V. Balasubramanian, Towards Open-World Object Detection, Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR'21**), pg 5830-5840, Jun 2021, DOI: 10.1109/CVPR46437.2021.00577
[Oral Paper ~4% acceptance]
- [C.1.34] Adepu Ravi Sankar, Yash Khasbage, Rahul V, V. Balasubramanian, A Deeper Look at the Hessian Eigenspectrum of Deep Neural Networks and its Applications to Regularization, Proceedings of the Association for the Advancement of Artificial Intelligence (**AAAI'21**), pg 9481-9488, Feb 2021, DOI: 10.1609/aaai.v35i11.17142
- [C.1.33] Anindya Sarkar, Anirban Sarkar, V. Balasubramanian, Enhanced Regularizers for Attributional Robustness, Proceedings of the Association for the Advancement of Artificial Intelligence (**AAAI'21**), pg 2532-2540, Feb 2021, DOI: 10.1609/aaai.v35i3.16355
- [C.1.32] Shivam Chandhok, V Balasubramanian, Two-Level Adversarial Visual-Semantic Coupling for Generalized Zero-shot Learning, Proceedings of IEEE Winter Conference on Applications of Computer Vision (**WACV'21**), pg 3100-3108, Jan 2021, DOI: 10.1109/WACV48630.2021.00314
- [C.1.31] Joseph K J, V. Balasubramanian, Meta-consolidation for Continual Learning, Proceedings of Neural Information Processing Systems (**NeurIPS'20**), pg 14374-14386, Dec 2020, DOI: 10.48550/arXiv.2010.00352
- [C.1.30] Mayank S., Nupur K., Puneet M., Abhishek S., V. Balasubramanian, Balaji K., Attributional Robustness Training using Input-Gradient Spatial Alignment, Proceedings of European Conference on Computer Vision (**ECCV'20**), pg 515-533, Aug 2020, DOI: 10.1007/978-3-030-58583-9_31
- [C.1.29] Puneet M., Vedant S., V. Balasubramanian, On Saliency Maps and Adversarial Robustness, Proceedings of European Conference of Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD'20), Ghent, Belgium, pg 272-288, Sep 2020, DOI: 10.1007/978-3-030-67661-2_17
- [C.1.28] Surgan J, Ayush C, Mausoom S, Piyush G, Balaji K, V. Balasubramanian, Retrospective Loss: Looking Back to Improve Training of Deep Neural Networks, Proceedings of ACM SIGKDD

- International Conference on Knowledge Discovery and Data Mining (KDD'20), San Diego, pg 1123-1131, Aug 2020. DOI: 10.1145/3394486.3403165
- [C.1.27] Shyam Rai, Anbumani Subramanian, V. Balasubramanian, C V Jawahar, Munich to Dubai: How far is it for Semantic Segmentation? Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'20), pg 2999-3008, Mar 2020, DOI: 10.1109/WACV45572.2020.9093400
- [C.1.26] Puneet Mangla, Mayank Singh, Abhishek Sinha, Nupur Kumari, Balaji K, V N Balasubramanian, Charting the Right Manifold: Manifold Mixup for Few-shot Learning, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'20), pg 2218-2227, Mar 2020, DOI: 10.1109/WACV45572.2020.9093338 (Also presented at the NeurIPS 2019 Workshop on Meta-Learning)
- [C.1.25] Dikshant Gupta, Aditya A, Nehal M, V. Balasubramanian, C V Jawahar, Multi-Space Approach to Zero-Shot Object Detection, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'20), pg 1209-1217, Mar 2020, DOI: 10.1109/WACV45572.2020.9093384
- [C.1.24] Harshitha M., V. Balasubramanian, A Little Fog for a Large Turn, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'20), pg 2902-2911, Mar 2020, DOI: 10.1109/WACV45572.2020.9093549
- [C.1.23] Joseph K J, Vamshi Teja R, Krishnakant S, V. Balasubramanian, Submodular Batch Selection for Training Deep Neural Networks, Proc of International Joint Conference on Artificial Intelligence (IJCAI'19), pg, 2677-2683, Aug 2019 (Also presented at Negative Dependence in ML Workshop at ICML 2019), DOI: 10.24963/ijcai.2019/372 [19% acceptance]
- [C.1.22] Nupur K., Abhishek S., Mayank Singh, Harshitha M, Balaji K, V. Balasubramanian, Harnessing the Vulnerability of Latent Layers in Adversarially Trained Models, Proceedings of International Joint Conference on Artificial Intelligence (IJCAI'19), pg 2779-2785, Aug 2019, DOI: 10.24963/ijcai.2019/385 (Also presented at Workshop on Safe Machine Learning, International Conference on Learning Representations ICLR 2019). [19% acceptance]
- [C.1.21] Aditya C., Piyushi M., Anirban S, V. Balasubramanian, Neural Network Attributions: A Causal Perspective, Proceedings of International Conference on Machine Learning (ICML'19), pg 981-990, Jun 2019, DOI: 10.48550/arXiv.1902.02302
- [C.1.20] A. Pal, V. Balasubramanian, Zero-shot Task Transfer, Proceedings of the IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR'19), pg 2189-2198, Jun 2019. DOI: 10.1109/CVPR.2019.00229 [Oral Paper: ~2% acceptance]
- [C.1.19] Joseph K.J, Arghya Pal, S. Rajanala, V. Balasubramanian, C4Synth: Cross-Caption Cycle-Consistent Text-to-Image Synthesis, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'19), pg 358-366, Jan 2019, DOI: 10.1109/WACV.2019.00044
- [C.1.18] Tejaswi K., Nagendar G., Guruprasad Hegde, V. Balasubramanian, C. V. Jawahar, Region-Based Active Learning for Efficient Labeling in Semantic Segmentation, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'19), pg 1109-1117, Jan 2019, DOI: 10.1109/WACV.2019.00123
- [C.1.17] Parikshit S., V. Balasubramanian, P.J. Narayanan, RefocusGAN: Scene Refocusing using a Single Image, in Proceedings of the European Conference on Computer Vision (ECCV'18), pg 519-535, Sep 2018, DOI: 10.1007/978-3-030-01225-0_31
- [C.1.16] A. Pal, V. Balasubramanian, Adversarial Data Programming: Using GANs to Relax the Bottleneck of Curated Labeled Data, in Proceedings of the IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR'18), pg 1556-1565, Jun 2018, DOI: 10.1109/CVPR.2018.00168
- [C.1.15] A. Sarkar, A. Chattopadhyay, P. Howlader, V. Balasubramanian, Grad-CAM++: Generalized Gradient-based Visual Explanations for Deep Convolutional Networks, Proceedings of IEEE Winter Conference on Applications of Computer Vision (WACV'18), pg 839-847, Mar 2018, DOI:

- [C.1.14] G. Mittal, T. Marwah, V. Balasubramanian, Attentive Semantic Video Generation using Captions, Proceedings of IEEE International Conference on Computer Vision (ICCV'17), pg 1435-1443, Oct 2017, DOI: 10.1109/ICCV.2017.159
- [C.1.13] T. Marwah, G. Mittal, V. Balasubramanian, Sync-DRAW: Automatic Video Generation using Deep Recurrent Attentive Architectures, Proceedings of ACM International Conference on Multimedia (ACM MM'17), pg 1096-1104, Oct 2017. [Oral Paper: 7% acceptance] DOI: <https://doi.org/10.1145/3123266.3123309>
- [C.1.12] D. Bhatt, D. Sodhi, A. Pal, V. Balasubramanian, M. Krishna, Have I Reached the Intersection? Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'17), pg 4495-4500, Sep 2017, DOI: <https://doi.org/10.1109/IROS.2017.8206317>
- [C.1.11] A Kamath, A Biswas, V. Balasubramanian, A Crowdsourced Approach to Student Engagement Recognition in e-Learning Environments, IEEE Winter Conference on Applications of Computer Vision (WACV'16), pg 1-9, Lake Placid, NY, Mar 2016, DOI: 10.1109/WACV.2016.7477618
- [C.1.10] D Singh, V. Balasubramanian, C. V. Jawahar, Fine-Tuning Human Pose Estimations in Videos, IEEE Winter Conference on Applications of Computer Vision (WACV'16), pg 1-9, Lake Placid, NY, Mar 2016, DOI: 10.1109/WACV.2016.7477680
- [C.1.9] S. Chakraborty, V. Balasubramanian, A. Ravi Sankar, S. Panchanathan, J. Ye, BatchRank: A Novel Batch Mode Active Learning Framework for Hierarchical Classification, In Proceedings of the 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'15), 2015, pp 99-108, DOI: 10.1145/2783258.2783298 [19.5% acceptance]
- [C.1.8] S. Chakraborty, J. Zhou, V. Balasubramanian, S. Panchanathan, I. Davidson, J. Ye, Active Matrix Completion, In Proceedings of the IEEE International Conference on Data Mining (ICDM'13), pp 81-90, Dallas, USA, Dec 2013, DOI: 10.1109/ICDM.2013.69 [11.6% acceptance]
- [C.1.7] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Optimal Batch Selection for Active Learning in Multi-label Classification, In Proceedings of the 19th ACM International Conference on Multimedia (ACM MM '11), pp 1413-1416, Scottsdale, USA, Nov 2011, DOI: 10.1145/2072298.2072028
- [C.1.6] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Dynamic Batch Mode Active Learning via L1 Regularization, in Proceedings of the National Conference on Artificial Intelligence (AAAI'11), Vol 2, pp 1764-1765, San Francisco, USA, Aug 2011, DOI: 10.1609/aaai.v25i1.8042
- [C.1.5] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Dynamic Batch Mode Active Learning, in Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'11), pp 2649-2656, Colorado Springs, USA, Jun 2011, DOI: 10.1109/CVPR.2011.5995715 [22.5% acceptance]
- [C.1.4] S. Krishna, V. Balasubramanian, S. Panchanathan, Enriching Social Situational Awareness in Remote Interactions: Insights and Inspirations from Disability Focused Research, in Proceedings of the ACM International Conference on Multimedia (ACM MM'10), pp 1275-1284, Firenze, Italy, Oct 2010, DOI: 10.1145/1873951.1874202
- [C.1.3] S. Marcel, C. McCool, S. Chakraborty, V. Balasubramanian, S. Panchanathan, J. Nolasco, L. Garcia, R. Aceves, et al., On the results of the first mobile biometry (MOBIO) face and speaker verification evaluation, in Proceedings of the 20th International Conference on Pattern Recognition (ICPR'10), pp 210-225, Istanbul, Turkey, Aug 2010, DOI: 10.1007/978-3-642-17711-8_22
- [C.1.2] V. N. Balasubramanian, J. Ye, S. Panchanathan, Biased Manifold Embedding: A framework for Person-Independent Head Pose Estimation, in Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR'07), pp 1-7, Minneapolis, USA, Jun 2007, DOI:

- [C.1.1] K. Kahol, N. C. Krishnan, V. N. Balasubramanian, S. Panchanathan, M. Smith, J. Ferrara, Measuring movement expertise in surgical tasks, in Proceedings of the 14th Annual ACM Conference on Multimedia (**ACM MM'06**), pp 719-722, Santa Barbara, USA, Oct 2006, DOI: 10.1145/1180639.1180792 10.1145/1180639.1180792

REFEREED WORKSHOPS (OR EQUIVALENT) IN TOP-TIER (A/A*-ranked) CONFERENCES

- [C.2.53] Divya Rajparia, Rahul Vigneswaran, Digvijaysing Rajput, Hari Chandana Kuchibhotla, Vineeth N. Balasubramanian, DES: Efficient Long-Tailed Exemplar-Free Continual Learning on Vision-Language Models, Workshop on Generalizing from Limited Resources in the Open World Workshop, International Joint Conference on Artificial Intelligence (IJCAI), Aug 2026
- [C.2.52] Sunayana Samavedam, Deepika Vemuri, Venkat Adithya Amula, P J Narayanan, Vineeth N. Balasubramanian, Sparse Autoencoders for LoRA-Adapted CLIP Under Domain Shift, Mechanistic Interpretability Workshop at International Conference on Machine Learning (ICML'26), Jul 2026
- [C.2.51] Abhay Bhandarkar, Vineeth N Balasubramanian, Pixels-to-Layers: Turning Generated Images into Editable Assets, Workshop on AI for Content Creation at IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'26), Jun 2026 (**Oral**) (*Also presented at Demos at CVPR'26*)
- [C.2.50] Abhirath Sangala, Vineeth N Balasubramanian, Amit Sharma, Revisiting Causal Reasoning in Language Models through Controlled Synthetic Worlds, Workshop on LLM Reasoning, International Conference on Learning Representations (ICLR'26), May 2026 (**Oral, Outstanding Paper**)
- [C.2.49] Sukruta Prakash Midigeshi, Sai Soumya Nalli, Utkarsh Tiwari, Amit Deshpande, Nagarajan Natarajan, Vineeth N. Balasubramanian, Amit Sharma, Gaurav Sinha, Improving Reachability on Reasoning Puzzles, Workshop on LLM Reasoning, International Conference on Learning Representations (ICLR'26), May 2026
- [C.2.48] Swarnim Maheshwari, Syed Imam Ali, Arkaprava Majumdar, Panshul Jindal, Vineeth N. Balasubramanian, Not All That's Colorful Is Real: Rethinking Metrics for Image Colorization, Workshop on Generative and Protective AI for Content Creation, Neural Information Processing Systems (NeurIPS'25), Dec 2025
- [C.2.47] Aditya Pola, Vineeth N Balasubramanian, Where does an LLM begin computing an instruction? Workshop on Unifying Representations in Neural Models, Neural Information Processing Systems (NeurIPS'25), Dec 2025
- [C.2.46] Deepika Vemuri, Sayanta Adhikari, Ankit Saha, Vineeth N Balasubramanian, Learning Hierarchically using Formal Concepts, Workshop on Visual Concepts, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'25), Jun 2025
- [C.2.45] Susmit Agrawal, Krishn Vishwas Kher, Madhumitha V, Vineeth N. Balasubramanian, Can memory networks play a role in task-specific modulation of neural circuits? Workshop on New Frontiers in Associative Memories, International Conference on Learning Representations (ICLR'25), May 2025 (**Oral**)
- [C.2.44] Bhat Dittakavi, Bharathi Callepalli, Swarnim Maheshwari, Vineeth N Balasubramanian, PoseGuru: Landmarks for Explainable Pose Correction using Exemplar-Guided Algorithmic Recourse, Workshop on Explainable AI for Computer Vision (XAI4CV), IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'25), Jun 2025
- [C.2.43] Bhat Dittakavi, Swarnim Maheshwari, Vineeth N Balasubramanian, Pose-to-Pose: A New Task and Benchmark for Human Pose Transition in Yoga, Workshop on Computer Vision in Sports, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'25), Jun 2025

- [C.2.42] Deepika Vemuri, Gautham Bellamkonda, Vineeth N Balasubramanian Enhancing Concept-based Learning with Logic, Workshops on Differentiable Almost Everywhere and NextGenAI Safety, International Conference on Machine Learning (ICML'24), Jul 2024
- [C.2.41] Hari Chandana K, Sai Srinivas K, A Gowtham Reddy, Vineeth N Balasubramanian, Can Better Text Semantics in Prompt Tuning Improve VLM Generalization? Workshop on What is Next in Multimodal Foundation Models, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'24), Jun 2024
- [C.2.40] Susmit Agrawal, Deepika Vemuri, Sri Siddarth Chakravarthy, Vineeth N Balasubramanian, CLAM: Continual Learning with Multimodal Concepts, Workshop on Continual Learning in Computer Vision, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'24), Jun 2024
- [C.2.39] Tarun Ram Menta, Surgan Jandial, Kash Patil, Vimal K B, Saketh Bachu, Mausoom Sarkar, Balaji Krishnamurthy, Vineeth N Balasubramanian, Chirag Agarwal, Active Transferability Estimation, Workshop on Learning with Limited Labelled Data, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'24), Jun 2024
- [C.2.38] Tanmay Garg, Deepika Vemuri, V Balasubramanian, Advancing Ante Hoc Explainable Models through Generative Adversarial Networks, Workshop on Human-Centric Representation Learning, Association for the Advancement of Artificial Intelligence (AAAI'24), Feb 2024 (*also accepted at Workshop on Deployable AI, AAAI'24*), DOI: 10.48550/arXiv.2401.04647
- [C.2.37] Aniket Vasisht, A Gowtham Reddy, Abhinav Kumar, V Balasubramanian, Amit Sharma, Causal Inference using LLM-Guided Discovery, Workshop on "Are Large Language Models Simply Causal Parrots?", Association for the Advancement of Artificial Intelligence (AAAI'24), Feb 2024, DOI: 10.48550/arXiv.2310.15117
- [C.2.36] Shivangana Rawat, Chaitanya Devaguptapu, V Balasubramanian, Partial Label Learning meets Active Learning: Enhancing Annotation Efficiency through Binary Questioning, Workshop on Data-centric Machine Learning Research, International Conference on Machine Learning (ICML'23), Jul 2023 (*also presented at Workshop on Knowledge and Logical Reasoning in the Era of Data-Driven Learning at ICML'23*), DOI: https://dmlr.ai/assets/accepted-papers/75/CameraReady/icml2023_camera_ready.pdf
- [C.2.35] Pranoy Panda, Sai Srinivas Kancheti, Gaurav Sinha, V Balasubramanian, Feature-Interpretable Real Concept Drift Detection, Workshop on Trustworthy ML, International Conference on Learning Representations (ICLR'23), May 2023. <https://openreview.net/forum?id=pA2uDAvTpp>
- [C.2.34] Charchit Sharma, Ayan Kumar Pahari, Pranoy Panda, Rebbapragada V C Sairam, Deepak Vijaykeerthy, V N Balasubramanian, Do Models see Corruption as we see? An Item Response Theory based study in Computer Vision, Workshop on Practical Machine Learning for Developing Countries: learning under limited/low resource scenarios, International Conference on Learning Representations (ICLR'23), May 2023. https://pml4dc.github.io/iclr2023/pdf/PML4DC_ICLR2023_49.pdf
- [C.2.33] Vaasudev Narayanan, Sai Srinivas Kancheti, V Balasubramanian, A Simple Test-Time Adaptation Method for Source-Free Domain Generalization, Workshop on Data-centric Machine Learning Research, International Conference on Learning Representations (ICLR'23), May 2023, <https://openreview.net/forum?id=Ran2xUWG2n>
- [C.2.32] Puneet Mangla, Shivam Chandhok, Milan, Balaji K, V Balasubramanian, INDIGO: Intrinsic Multimodality for Domain Generalization, Workshop on Out-of-Distribution Generalization in Computer Vision, European Conference on Computer Vision (ECCV'22), Oct 2022, DOI: 10.48550/arXiv.2206.05912
- [C.2.31] Pranoy Panda, Sai Srinivas Kancheti, Gaurav Sinha, V Balasubramanian, Interpretable Model Drift Detection, Workshop on Interpretability for Machine Learning and Healthcare, International Conference on Machine Learning (ICML'22), Jul 2022. <https://github.com/interpretable-ml-in->

healthcare/IMLH2022/blob/main/57%5CCameraReady%5CInterpretable_Model_Drift_Detection_I
MLH_Workshop_of_ICML_2022_%20camera_ready.pdf

- [C.2.30] Shivangana Rawat, Sai Vikas Desai, V Balasubramanian, RADIAL: Random Sampling from Intelligent Pool for Active Learning, Workshop on Adaptive Experimental Design and Active Learning in the Real World, International Conference on Machine Learning (ICML'22), Jul 2022. <https://realworldml.github.io/files/cr/paper51.pdf>
- [C.2.29] Bhat Dittakavi, Vikas Desai, Kamakshi Callepalli, Divyagna B, Soumi Chakraborty, S Nishant Reddy, Ayon Sharma, Vineeth N Balasubramanian, Pose Tutor: An Explainable System for Pose Correction in the Wild, Workshop on Computer Vision in Sports, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), Jun 2022, DOI: 10.1109/CVPRW56347.2022.00398 * **Oral Presentation** *
- [C.2.28] K J Joseph, Sujoy Paul, Gaurav Aggarwal, Soma Biswas, Piyush Rai, Kai Han, Vineeth N Balasubramanian, Spacing Loss for Discovering Novel Categories, Workshop on Continual Learning in Computer Vision, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), Jun 2022, DOI: 10.48550/arXiv.2204.10595 * **Best Paper Award Honorable Mention** *
- [C.2.27] Vedant Singh, Surgan Jandial, Balaji Krishnamurthy, Vineeth N Balasubramanian, On Conditioning the Input Noise for Controlled Image Generation with Diffusion Models, Workshop on AI for Content Creation, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'22), Jun 2022, DOI: 10.48550/arXiv.2205.03859
- [C.2.26] Arjun Ashok, Chaitanya Devaguptapu, Vineeth Balasubramanian, Learning Modular Structures That Generalize Out-Of-Distribution, Student Abstract Program, Association for the Advancement of Artificial Intelligence (AAAI'22), Vol. 36, No. 11, pp. 12905-12906, Feb 2022, DOI: 10.1609/aaai.v36i11.21589
- [C.2.25] Gaurav Bhatt, Shivam Chandhok, VN Balasubramanian, Learn from Anywhere: Rethinking Generalized Zero-Shot Learning with Limited Supervision, Workshop on Weakly Supervised Representation Learning, International Joint Conference on Artificial Intelligence (IJCAI'21), Jul 2021, DOI: 10.48550/arXiv.2107.04952.
- [C.2.24] A Gowtham Reddy, Benin Godfrey, V. Balasubramanian, CANDLE: An Image Dataset for Causal ANalysis in DisentangLed REpresentations, Workshop on Causality in Vision, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'21), pp. 8089-8097, Jun 2021, DOI: 10.1609/aaai.v36i7.20781 * **Best Paper Award** *
- [C.2.23] Radhika Dua*, Sai Srinivas Kancheti*, Vineeth N Balasubramanian, Beyond VQA: Generating Multi-word Answer and Rationale to Visual Questions, Workshop on Multimodal Learning and Applications, IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR'21), Jun 2021
- [C.2.22] Chaitanya Devaguptapu, Devansh Agarwal, Gaurav Mittal, V. Balasubramanian, Adversarial Robustness: A Neural Architecture Search Perspective, Workshops on Neural Architecture Search and From Shallow to Deep: Overcoming Limited and Adverse Data (RadhiS2D-OLAD) at International Conference on Learning Representations (ICLR'21), pp. 152-161, May 2021, DOI: 10.1109/ICCVW54120.2021.00022
- [C.2.21] Akshay Chandra, Sai Vikas D., Chaitanya D, V. Balasubramanian, Is There a Good Initial Pool for Active Learning? Pre-Register Workshop, Neural Information Processing Systems (NeurIPS Workshops'20), pp. 14-32, Dec 2020. DOI: <https://proceedings.mlr.press/v148/chandra21a.html>
- [C.2.20] Sai Vikas Desai, V. Balasubramanian, Towards Fine-grained Sampling for Active Learning in Object Detection, Workshop on Visual Learning with Limited Labels, IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR'20), pp. 924-925, Jun 2020, DOI: <http://doi.org/10.1109/CVPRW50498.2020.00470>
- [C.2.19] Uttaran Sinha, Saurabh Joshi, V. Balasubramanian, Defending Deep Neural Networks against

Structural Perturbations, Workshop on Uncertainty and Robustness in Deep Learning, International Conference on Machine Learning (ICML'19), Jun 2019. <https://raiith.iith.ac.in/5683/>

- [C.2.18] Chaitanya D, Ninad A, Manuj Sharma, V. Balasubramanian, Borrow from Anywhere: Pseudo Multi-modal Object Detection in Thermal Imagery, Workshop on Perception beyond the Visible Spectrum, IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR'19), pp. 1-10, Jun 2019, DOI: <https://doi.org/10.1109/cvprw.2019.00135>.
- [C.2.17] Joseph K.J., R. Patel, U. Gupta, A. Srivastava, V. Balasubramanian, MASON: A Model AgnoStic ObjectNess Framework, in Workshop On Autonomous Navigation in Unconstrained Environments, European Conference on Computer Vision, Workshop Proceedings (ECCV), pp. 642-658, Sep 2018, DOI: https://doi.org/10.1007/978-3-030-11021-5_40
- [C.2.16] Zhu Pengfei, Wen Longyin, Nehal M., Naveen Kumar, Joseph K.J., V. Balasubramanian, et al. VisDrone-DET2018: The Vision Meets Drone Object Detection in Image Challenge Results, European Conference on Computer Vision, Workshop Proceedings (ECCV), Sep 2018, pp. 437-468, DOI: [10.1007/978-3-030-11021-5_27](https://doi.org/10.1007/978-3-030-11021-5_27)
- [C.2.15] Vaibhav Sinha, Sukrut Rao, V. Balasubramanian, Fast Dawid-Skene: A Fast Vote Aggregation Scheme for Sentiment Classification, in Workshop on Issues of Sentiment Discovery and Opinion Mining at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), London, UK, Aug 2018, DOI: [10.48550/arXiv.1803.02781](https://doi.org/10.48550/arXiv.1803.02781).
- [C.2.14] A. Gupta, A. D'Cunha, K. Awasthi, V. Balasubramanian, DAiSEE: Towards User Engagement Recognition in the Wild, in *4th Vision Meets Cognition Workshop* at IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR), Salt Lake City, USA, Jun 2018, DOI: [10.48550/arXiv.1609.01885](https://doi.org/10.48550/arXiv.1609.01885)
- [C.2.13] A. Ravi Sankar, Vishwak S., V. Balasubramanian, On the Analysis of Trajectories of Gradient Descent in the Optimization of Deep Neural Networks, in *Workshop on Theory of Deep Learning* at International Conference on Machine Learning (ICML), Stockholm, Sweden, Jul 2018, DOI: <https://doi.org/10.48550/arXiv.1807.08140>
- [C.2.12] P. Lade, V. Balasubramanian, S. Panchanathan, Probabilistic Topic Models for Human Emotion Analysis, in *Proceedings of the Workshop on Topic Models: Computation, Application and Evaluation* at Neural Information Processing Systems (NIPS), Lake Tahoe, USA, Dec 2013. <https://cubic.asu.edu/content/probabilistic-topic-models-human-emotion-analysis>
- [C.2.11] S. Panchanathan, T. McDaniel, V. Balasubramanian, Person-Centered Accessible Technologies: Improved Usability and Adaptation through Inspirations from Disability Research, in *Proceedings of the International Workshop on User Experience in e-Learning and Augmented Technologies in Education Proceedings* at ACM Multimedia (ACM MM'12), pp 1-6, Nara, Japan, Nov 2012, DOI: <https://doi.org/10.1145/2390895.2390897>
- [C.2.10] S. Chakraborty, V. Balasubramanian, S. Panchanathan, An Optimization Based Framework for Dynamic Batch Mode Active Learning, in *Proceedings of the 3rd International Workshop on Optimization for Machine Learning* at Neural Information Processing Systems (NIPS), Whistler, Canada, Dec 2010. <https://cubic.asu.edu/content/optimization-based-framework-dynamic-batch-mode-active-learning-0>
- [C.2.9] V. Balasubramanian, S. Chakraborty, S. Krishna, S. Panchanathan, Enhancing Social Interactions of Individuals with Visual Impairments: A Case Study for Assistive Machine Learning, in *Proceedings of the Workshop on Machine Learning for Assistive Technologies* at Neural Information Processing Systems (NIPS), Whistler, Canada, Dec 2010. <https://cubic.asu.edu/content/enhancing-social-interactions-individuals-visual-impairments-case-study-assistive-machine-le>
- [C.2.8] V. Balasubramanian, S. Chakraborty, S. Panchanathan, Multiple Kernel Learning for Efficient

Conformal Predictions, in *Proceedings of the Workshop on New Directions in Multiple Kernel Learning* at Neural Information Processing Systems (NIPS), Whistler, Canada, Dec 2010. <https://cubic.asu.edu/content/multiple-kernel-learning-efficient-conformal-predictions>

- [C.2.7] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Learning from Summaries of Videos: Applying Batch Mode Active Learning to Face-based Biometrics, Workshop on Biometrics, in *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CVPRW'10)*, pp 130-137, San Francisco, USA, Jun 2010, DOI: <https://doi.org/10.1109/cvprw.2010.5544617>
- [C.2.6] V. Balasubramanian, S. Chakraborty, S. Krishna, S. Panchanathan, Human-Centered Machine Learning in a Social Interaction Assistant for Individuals with Visual Impairments, in *Proceedings of the Symposium on Assistive Machine Learning for People with Disabilities* at Neural Information Processing Systems (NIPS), Vancouver, Canada, Dec 2009. <https://cubic.asu.edu/content/human-centered-machine-learning-social-interaction-assistant-individuals-visual-impairments>
- [C.2.5] V. Balasubramanian, S. Chakraborty, S. Panchanathan, Online Active Learning using Conformal Predictions, in *Proceedings of the Workshop on Analysis and Design of Algorithms for Interactive Machine Learning* at Neural Information Processing Systems (NIPS), Vancouver, Canada, Dec 2009. <https://cubic.asu.edu/content/online-active-learning-using-conformal-predictions>
- [C.2.4] V. Balasubramanian, S. Chakraborty, S. Panchanathan, Generalized Query by Transduction for Online Active Learning, Workshop on Online Learning for Computer Vision, in *Proceedings of the IEEE Computer Society International Conference on Computer Vision Workshops (ICCVW'09)*, pp 1378-1385, Kyoto, Japan, Oct 2009, DOI: 10.1109/ICCVW.2009.5457449.
- [C.2.3] S. Krishna, D. Colbry, J. Black, V. N. Balasubramanian, S. Panchanathan, A Systematic Requirements Analysis and Development of an Assistive Device to Enhance the Social Interaction of People Who are Blind or Visually Impaired, in *Proceedings of the European Conference on Computer Vision (ECCV) Workshop on Computer Vision Applications for the Visually Impaired (CVAVI'08)*, Marseille, France, Oct 2008., DOI: <https://inria.hal.science/inria-00325432/document>
- [C.2.2] S. Panchanathan, N. C. Krishnan, S. Krishna, T. McDaniel, V. N. Balasubramanian, Enriched Human-Centered Multimedia Computing through Inspirations from Disabilities and Deficit-Centered Computing Solutions, in *Proceedings of the 3rd ACM International Workshop on Human-Centered Computing*, ACM Multimedia, pp 35-42, Vancouver, Canada, Oct 2008, DOI: 10.1145/1462027.1462033
- [C.2.1] V. Balasubramanian, S. Chakraborty, S. Panchanathan, Multiple Cue Integration in Transductive Confidence Machines for Head Pose Classification, Workshop on Online Learning for Classification, in *Proc of IEEE Computer Vision and Pattern Recognition Workshops (CVPRW'08)*, pp 1-8, Anchorage, USA, Jun 2008, DOI: <https://doi.org/10.1109/cvprw.2008.4563070>

OTHER REFEREED CONFERENCE/WORKSHOP PROCEEDINGS

- [C.3.49] Pranoy Panda, Siddharth Tandon, Vineeth N Balasubramanian, FW-Shapley: Real-time Estimation of Weighted Shapley Values, *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'24)*, Apr 2024
- [C.3.48] Pranoy Panda, Sai Srinivas Kancheti, Gaurav Sinha, Vineeth N Balasubramanian, Interpretable Model Drift Detection, *Proceedings of the 6th Joint International Conference on Data Science & Management of Data (ACM CODS-COMAD'24)*, Jan 2024, DOI: 10.1145/3632410.3632434
- [C.3.47] Gaurav Bhatt, Deepayan Das, Leonid Sigal, Vineeth N Balasubramanian, Weakly-supervised Spatially Grounded Concept Learner for Few-Shot Learning, *Proceedings of British Machine Vision Conference (BMVC'23)*, Nov 2023, <https://papers.bmvc2023.org/0858.pdf>
- [C.3.46] Purbayan Kar, Vishal Chudasama, Naoyuki Onoe, Pankaj Wasnik, Vineeth N Balasubramanian, Fiducial Focus Augmentation for Facial Landmark Detection, *Proceedings of British Machine*

Vision Conference (**BMVC'23**), Nov 2023, <https://bmvc2022.mpi-inf.mpg.de/BMVC2023/562/>

- [C.3.45] Surjan Jandial, Yash Khasbage, Arghya Pal, Balaji Krishnamurthy, V N Balasubramanian, RetroKD: Leveraging Past States for Regularizing Targets in Teacher-Student Learning, Proceedings of the 6th Joint International Conference on Data Science & Management of Data (ACM CODS-COMAD'23), pg 10-18, Jan 2023, DOI: <https://doi.org/10.1145/3570991.3571014>
- [C.3.44] Sandesh Kamath, Amit Deshpande, K V Subrahmanyam, V. Balasubramanian, Universalization of Any Adversarial Attack using Very Few Test Examples, Proc of ACM IKDD Joint International Conference on Data Science & Management of Data (ACM CoDS-COMAD'22), pg. 72-80, Jan 2022, DOI: <https://doi.org/10.1145/3493700.3493718> * **Best Paper Award (Research Track)** *
- [C.3.43] Rahul Vigneswaran, Marc T Law, V N Balasubramanian, Makarand Tapaswi, Feature Generation for Long-tail Classification, Proceedings of 12th Indian Conference on Computer Vision, Graphics and Image Processing, (ICVGIP'20-21), pp. 1-4, Dec 2021, DOI: <https://doi.org/10.1145/3490035.3490300>
- [C.3.42] Varshaneya V, Balasubramanian S; V Balasubramanian, Teaching GANs to Sketch in Vector Format, Proceedings of 12th Indian Conference on Computer Vision, Graphics and Image Processing, (ICVGIP'20-21), pp. 1-8, Dec 2021, DOI: <https://doi.org/10.1145/3490035.3490258>
- [C.3.41] Shivam Chandhok, Sanath Narayan, Hisham Cholakkal, Rao Muhammad Anwer, Vineeth N Balasubramanian, Fahad Shahbaz Khan, Ling Shao, Structured Latent Embeddings for Recognizing Unseen Classes in Unseen Domains, Proceedings of British Machine Vision Conference (BMVC'21), Nov 2021, DOI: <http://doi.org/10.48550/arXiv.2107.05622>
- [C.3.40] Sakshi Varshney, P. K. Srijith, Vineeth N. Balasubramanian, STM-GAN: Sequentially Trained Multiple Generators for Mitigating Mode Collapse, International Conference on Neural Information Processing (ICONIP), pp. 676-684, Nov 2020, DOI: https://doi.org/10.1007/978-3-030-63823-8_77
- [C.3.39] Udit Maniyar, Joseph K J, Aniket Deshmukh, Urun Dogan, V. Balasubramanian, Zero-shot Domain Generalization, Proceedings of British Machine Vision Conference (**BMVC'20**), Sep 2020, DOI: <http://doi.org/10.48550/arXiv.2008.07443>
(Also presented at Workshop on Visual Learning with Limited Labels, IEEE-CVF International Conference on Computer Vision and Pattern Recognition (CVPR'20), Jun 2020)
- [C.3.38] Shyam Nandan R., Anbumani S., V. Balasubramanian, C V Jawahar, Spatial Feedback Learning to Improve Semantic Segmentation in Hot Weather, Proceedings of British Machine Vision Conference (**BMVC'20**), Sep 2020, DOI: https://www.bmvc2020-conference.com/conference/papers/paper_0742.html
- [C.3.37] Saurabh R, Rahul B, V N Balasubramanian, Nageswara Rao N, Sujit Gujar, C V Jawahar, Human Machine Collaboration for Face Recognition, Proceedings of ACM IKDD Joint International Conference on Data Science & Management of Data (**CoDS-COMAD'20**), pp. 10-18, Jan 2020 ,DOI: <https://doi.org/10.1145/3371158.3371160> * **Best Paper Award Runner-up** *
- [C.3.36] Sai Vikas Desai, Akshay C, Wei Guo, S Ninomiya, V Balasubramanian, An Adaptive Supervision Framework for Active Learning in Object Detection, in Proceedings of the British Machine Vision Conference (**BMVC'19**), pp. 10-18, Sep 2019, DOI: <http://doi.org/10.48550/arXiv.1908.02454>
- [C.3.35] G. Nagendar, V. Balasubramanian, C. V. Jawahar, Neuro-IoU: Learning a Surrogate Loss for Semantic Segmentation, in Proc of the British Machine Vision Conference (**BMVC'18**), Sep 2018.
- [C.3.34] Supriya P., Himangi Mittal, Manish Gupta, V. Balasubramanian, STWalk: Learning Trajectory Representations in Temporal Graphs, Proceedings of ACM IKDD Joint International Conference on Data Science & Management of Data (**CoDS-COMAD'18**), pp. 210-219, Jan 2018, DOI: <https://doi.org/10.1145/3152494.3152512>
- [C.3.33] A. Ravi Sankar, V. Balasubramanian, Are Saddles Good Enough for Deep Learning, arXiv:1706.02052, Proceedings of ACM IKDD Joint International Conference on Data Science & Management of Data (**CoDS-COMAD'18**), pp. 37-45, Jan 2018, DOI: [10.1145/3152494.3152498](https://doi.org/10.1145/3152494.3152498)
- [C.3.32] Vishwak S., A. Ravi Sankar, V. Balasubramanian, ADINE: An Adaptive Momentum Method for

- Stochastic Gradient Descent, Proceedings of ACM IKDD Joint International Conference on Data Science & Management of Data (CoDS-COMAD'18), pp. 249-256, Jan 2018, DOI: <https://doi.org/10.1145/3152494.3152515>
- [C.3.31] Swetha S., V. Balasubramanian, C. V. Jawahar, Sequence to Sequence learning for Pose Correction in Videos, Proceedings of 4th Asian Conference on Pattern Recognition (ACPR'17), pp. 298-303, Nov 2017, DOI: <https://doi.org/10.1109/acpr.2017.126>
- [C.3.30] B Akilesh, T. Marwah, V. Balasubramanian, K. Rajamani, On the Relevance of Very Deep Networks for Diabetic Retinopathy Diagnostics, *IBM Collaborative Academia Research Exchange (I-CARE) Conference*, Bangalore, 2016, pp. 47-54, DOI: https://doi.org/10.1007/978-981-10-6418-0_6
- [C.3.29] S. Manocha, A Ravi Sankar, V. Balasubramanian, Dissimilarity-based Contrastive Divergence for Anomaly Detection, *2nd Indian Workshop on Machine Learning*, Kanpur, 2016.
- [C.3.28] A. Pal, B.K. Khonglah, S. Mandal, H. Choudhury, S.R.M. Prasanna, H.L. Rufiner, V. Balasubramanian, Online Bengali Handwritten Numerals Recognition Using Deep Autoencoders, *National Conference on Communications (NCC)*, 2016, DOI: <https://doi.org/10.1109/ncc.2016.7561181>
- [C.3.27] A Ravi Sankar, V. Balasubramanian, Similarity-based Contrastive Divergence Methods for Energy-based Deep Learning Models, 7th Asian Conference on Machine Learning (ACML'15), pg. 391-406, Hong Kong, 2015, DOI: <https://proceedings.mlr.press/v45/Sankar15.html>
- [C.3.26] Sai Rajeshwar, A Ravi Sankar, V. Balasubramanian, C.D. Sudheer, Scaling up the training of Deep CNNs for Human Action Recognition, *4th International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (in conjunction with IPDPS 2015)*, Hyderabad, India, 2015, pp 1172-1177, DOI: <https://doi.org/10.1109/ipdpsw.2015.93>
- [C.3.25] R. Jaiswal, V. Balasubramanian, Model Selection Using Efficiency of Conformal Predictors, *3rd International Symposium on Learning and Data Sciences (SLDS 2015)*, London, UK, pp. 291-300, Apr 2015, DOI: https://doi.org/10.1007/978-3-319-17091-6_24
- [C.3.24] Sai Rajeshwar, A Ravi Sankar, V. Balasubramanian, C.D. Sudheer, Parallel Learning of Deep Convolutional Neural networks and its Application to Action Recognition, *IEEE International Conference on High Performance Computing - Student Research Symposium*, Goa, India, 2014, pp. 31-53, DOI: https://doi.org/10.1142/9789811218842_0002
- * NVIDIA Best Paper Award for GPU Computing *
- [C.3.23] V. Balasubramanian, A. Baker, M. Yanez, S. Chakraborty, S. Panchanathan, PyCP: An Open-Source Conformal Predictions Toolkit, in *Proceedings of Artificial Intelligence Applications and Innovations (Workshop on Conformal Prediction and Its Applications)*, vol 412, pp 361-370, Paphos, Cyprus, Oct 2013, DOI: https://doi.org/10.1007/978-3-642-41142-7_37
- [C.3.22] H. Venkateswara, V. Balasubramanian, S. Panchanathan, Multiresolution Match Kernels for Gesture Video Classification, in *Proceedings of IEEE International Conference on Multimedia and Expo (ICME)*, pp 1-4, San Jose, USA, Jul 2013, DOI: <https://doi.org/10.1109/icmew.2013.6618279>
- [C.3.21] P. Lade, V. Balasubramanian, S. Panchanathan, Latent Facial Topics for Affect Analysis, in *Proceedings of IEEE International Conference on Multimedia and Expo (ICME) Workshop on Affective Analysis in Multimedia*, pp 1-6, San Jose, USA, Jul 2013, DOI: <https://doi.org/10.1109/icmew.2013.6618337>
- [C.3.20] P. Lade, S. Panchanathan, V. Balasubramanian, Detection of Changes in Human Affect Dimensions Using An Adaptive Temporal Topic Model, in *Proceedings of IEEE International Conference on Multimedia and Expo (ICME)*, pp 1-6, San Jose, USA, Jul 2013, DOI: <https://doi.org/10.1109/icme.2013.6607627>
- [C.3.19] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Batch Mode Active Learning for Multimedia Pattern Recognition, PhD Workshop on Multimedia Computing Research, in *Proceedings of IEEE International Symposium on Multimedia*, pp 489-490, Irvine, USA, Dec 2012,

DOI: <https://doi.org/10.1109/ism.2012.101>

- [C.3.18] M. Alzubaidi, V. Balasubramanian, A. Patel, S. Panchanathan, J. A. Black, Efficient Atypicality Detection in Chest Radiographs, in *Proceedings of 11th International Conference on Information Science, Signal Processing and their Applications*, pp 193-198, Montreal, Canada, Jul 2012, DOI: <https://doi.org/10.1109/isspa.2012.6310544>
- [C.3.17] M. Alzubaidi, V. Balasubramanian, A. Patel, S. Panchanathan, and J. A. Black, A Novel Semi-Transductive Learning Framework for Atypicality Detection in Chest Radiographs, in *Proceedings of SPIE Conference on Medical Imaging*, Vol 8315 (Computer-Aided Diagnosis), 83153A, San Diego, USA, Feb 2012, DOI: <https://doi.org/10.1117/12.911145>
- [C.3.16] S. Chakraborty, H. Venkateswara, V. Balasubramanian, S. Panchanathan, Active Batch Selection for Fuzzy Classification in Facial Expression Recognition, in *Proceedings of 10th International Conference on Machine Learning and Applications (ICMLA'11)*, vol.1, pp.241-246, Hawaii, USA, Dec 2011, DOI: <https://doi.org/10.1109/icmla.2011.22>
- [C.3.15] R. Chattopadhyay, S. Chakraborty, V. Balasubramanian, S. Panchanathan, Optimization-based Domain Adaptation towards Person-Adaptive Classification Models, in *Proceedings of 10th International Conference on Machine Learning and Applications (ICMLA'11)*, vol.1, pp.476-483, Hawaii, USA, Dec 2011, DOI: <https://doi.org/10.1109/icmla.2011.111>
- [C.3.14] S. Panchanathan, S. Krishna, V. Balasubramanian, Human-Centered Multimedia Computing: Inspirations through Enriching the Lives of Individuals with Sensory, Motor, Perceptual and Cognitive Disabilities, in *Proceedings of the 7th International Conference on Trends in Industrial Measurements and Automation (TIMA 2011)*, pp 1-6, Chennai, India, Jan 2011, DOI: <https://dl.acm.org/doi/10.1145/1462027.1462033>
- [C.3.13] V. Balasubramanian, J. Ye, S. Chakraborty, S. Panchanathan, Kernel Learning for Efficiency Maximization in the Conformal Predictions Framework, in *Proceedings of the 9th International Conference on Machine Learning and Applications (ICMLA '10)*, IEEE Computer Society, pp 235-242, Washington DC, USA, Dec 2010, DOI: <https://doi.org/10.1109/icmla.2010.42>
- [C.3.12] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Dynamic Batch Size Selection for Batch Mode Active Learning in Biometrics, in *Proceedings of the 9th International Conference on Machine Learning and Applications (ICMLA '10)*, IEEE Computer Society, pp 15-22, Washington DC, USA, Dec 2010, DOI: <https://doi.org/10.1109/icmla.2010.10>
- [C.3.11] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Batch Mode Active Learning for Biometric Recognition, *Proceedings of SPIE International Conference on Biometric Technology for Human Identification, SPIE Defense, Security & Sensing*, Vol 7667, B. V. K. Vijaya Kumar, Salil Prabhakar, Arun A. Ross (Eds.), 76670W, Orlando, USA, Apr 2010, DOI: <https://doi.org/10.1117/12.850676>
- [C.3.10] M. Alzubadi, V. Balasubramanian, J. A. Black, A. Patel, S. Panchanathan, What Catches a Radiologist's Eye? A Comprehensive Comparison of Feature Types for Saliency Prediction, in *Proceedings of SPIE Conference on Medical Imaging*, Vol 7624 (Computer-Aided Diagnosis), 76240W, San Diego, USA, Feb 2010, DOI: <https://doi.org/10.1117/12.844508>
- [C.3.9] S. Nataraju, V. Balasubramanian, S. Panchanathan, Learning Attention Based Saliency in Videos from Human Eye Movements, in *Proceedings of the International Workshop on Motion and Video Computing (WMVC)*, IEEE Computer Society, pp 134-139, Snowbird, USA, Dec 2009, DOI: <https://doi.org/10.1109/wmvc.2009.5399229>
- [C.3.8] V. Balasubramanian, R. Gouripeddi, J. Vermillion, A. Bhaskaran, R. Siegel, S. Panchanathan, Support Vector Machine Based Conformal Predictors for Risk of Complications Following a Coronary Drug Eluting Stent Procedure, in *Proceedings of IEEE Computers in Cardiology*, pp 5-8, Park City, USA, Sep 2009, ISBN : 978-1-4244-7282-6
*** Rosanna Deganni Young Investigator Award competition finalist ***
- [C.3.7] R. Gouripeddi, V. Balasubramanian, J. Harris, A. Bhaskaran, R. Siegel, S. Panchanathan, Ranking Predictors of Complications following a Drug Eluting Stent Procedure using Support Vector Machines, in *Proc of IEEE Computers in Cardiology*, pp 345-348, Park City, USA, Sep 2009, ISBN:

- [C.3.6] R. Gouripeddi, V. Balasubramanian, J. Harris, A. Bhaskaran, R. Siegel, S. Panchanathan, Predicting risk of complications following a Drug Eluting Stent Procedure: a SVM approach for imbalanced data, in *Proceedings of 22nd IEEE International Symposium on Computer-Based Medical Systems*, pp 1-7, Albuquerque, USA, Aug 2009. DOI: <https://doi.org/10.1109/CBMS.2009.5255454>
- [C.3.5] T. McDaniel, S. Krishna, V. Balasubramanian, D. Colbry, S. Panchanathan, Using a haptic belt to convey non-verbal communication cues during social interactions to individuals who are blind, in *Proceedings of IEEE International Workshop on Haptic Audio-visual Environments and Games (HAVE)*, pp.13-18, Ottawa, Canada, Oct 2008, DOI: <https://doi.org/10.1109/have.2008.4685291>
* Best Paper Award *
- [C.3.4] S. Krishna, S. Panchanathan, T. Hedgpeth, C. Juillard, V. Balasubramanian, N. C. Krishnan, A Wearable Wireless RFID System for Accessible Shopping Environments, in *Proceedings of the ICST 3rd International Conference on Body Area Networks (BodyNets'08)*, pp 29:1-29:8, Tempe, USA, Mar 2008, DOI: <https://doi.org/10.4108/icst.bodynets2008.2921>
- [C.3.3] S. Panchanathan, S. Krishna, J.A. Black, V. Balasubramanian, Human-Centered Multimedia Computing: A New Paradigm for the Design of Assistive and Rehabilitative Environments, in *Proceedings of the International Conference on Signal Processing, Communications and Networking (ICSCN '08)*, pp 1-7, Chennai, India, Jan 2008, DOI: <https://doi.org/10.1109/icscn.2008.4447151>
- [C.3.2] V. N. Balasubramanian, S. Panchanathan, Biased Manifold Embedding for Person-Independent Head Pose Estimation, in *Proceedings of the 2nd International Conference on Computer Vision Theory and Applications*, pp 76-84, Barcelona, Spain, Mar 2007, DOI: <https://doi.org/10.5220/0002057100760082>
- [C.3.1] N.B. Vineeth, B. Krishnamoorthy, G.V. Prabhakara Rao, Mosaicing of MPEG compressed video: a unified approach, in *Proceedings of the SPIE International Conference on Optical Science and Engineering, Vol 5558 (Applications of Digital Image Processing)*, 847, Denver, USA, Aug 2004, DOI: <https://doi.org/10.1117/12.561031>

OTHER

- [O.8] S. Pandhre, M. Gupta, V. Balasubramanian, Community-based Outlier Detection for Edge-Attributed Graphs, *arXiv:1612.09435*, Dec 2016.
- [O.7] A. Gupta, V. Balasubramanian, DAiSEE: Towards User Engagement Recognition in the Wild, *arXiv:1609.01885*, Nov 2016.
- [O.6] B. B. Sau, V. Balasubramanian, Deep Model Compression: Distilling Knowledge from Noisy Teachers, *arXiv:1610.09650*, Oct 2016.
- [O.5] S. Chakraborty, V. Balasubramanian, S. Panchanathan, Batch Mode Active Learning for Multimedia Pattern Recognition, *7th Annual Machine Learning Symposium, New York Academy of Sciences*, New York, USA, Oct 2012.
- [O.4] V. Balasubramanian, S. Chakraborty, S. Panchanathan, Confidence Estimation in Pattern Classification: An Analysis with Head Pose Estimation, *Technical Report TR-09-12, School of Computing and Informatics*, Arizona State University, Jul 2009.
- [O.3] S. Krishna, T. McDaniel, V. Balasubramanian, D. Colbry, S. Panchanathan, Haptic Belt for Delivering Nonverbal Cues to People who are Blind/Visually Impaired, *24th Annual International Technology and Persons with Disabilities Conference (CSUN 2009)*, Los Angeles, USA, Mar 2009.
- [O.2] S. Krishna, V. Balasubramanian, N. C. Krishnan, T. Hedgpeth, The iCARE Ambient Interactive Shopping Environment, *CSUN's 23rd Annual International Technology and Persons with Disabilities Conference (CSUN 2008)*, Los Angeles, USA, Mar 2008.
- [O.1] V. N. Balasubramanian, Towards Task-based Gestemes: Surgical Gesture Recognition using Maximum Mutual Information Neural Networks, *Research in Engineering & Applied Sciences (REAS) Symposium*, Arizona State University, 2006.

STUDENTS AND MENTORING

Postdocs

Dr Sandesh Kamath, 2020 - 23 (PhD, Chennai Mathematical Institute, Next: Computer Vision Center, Universitat Autònoma de Barcelona)

PhD Students

Adepu Ravi Sankar, 2014 - 20 (Intel PhD Fellow) (Next: ML Scientist, Verisk R&D -> Research Scientist, Amazon)

Arghya Pal, 2015 - 20 (Research Excellence Award, IIT-H; Intel PhD Fellow) (Next: Postdoc, Harvard University, USA -> Assistant Professor, Monash University)

Anirban Sarkar, 2016 - 22 (Research Excellence Award, IIT-H) (Next: Postdoc, Massachusetts Institute of Technology, USA)

Sakshi Varshney, 2016 - 22 (Co-Advised with Dr P K Srijith) (Visvesvaraya Fellow) (Next: Postdoc, Aalto University, Finland)

K J Joseph, 2018 - 23 (Research Excellence Award, IIT-H; TCS PhD Fellow) (Next: Research Scientist, Adobe Research)

Thrupthi Ann John, 2016 - 24 (Co-Advised with Prof C V Jawahar at IIIT-H)

Abbavaram Gowtham Reddy, 2019 - 24 (Prime Minister Research Fellow) (Next: Postdoc, CISPA Helmholtz Center for Information Security, Germany)

Hari Chandana Kuchibhotla, 2020 - 26 (Prime Minister Research Fellow) (Next: Research Scientist, Fujitsu Research)

Bhat Dittakavi, 2019 -

Sairam Rebbapragada, 2020 -

Rohit Dubey, 2020 -

Sai Srinivas Kancheti, 2021 - (Prime Minister Research Fellow)

Deepak Mittal, 2021 -

Deepika Vemuri, 2022 - (Prime Minister Research Fellow)

Krishn Vishwas Kher, 2023 - (Prime Minister Research Fellow)

Monish Keswani, 2024 -

Poornima Jain, 2024 -

Yedu Krishna P, 2025 - (Visvesvaraya PhD Fellow)

MTech Students

U Adithyan, MTech (RA), 2025 -

Swarnim Maheswari, MTech (RA), 2025 -

Aditya Pola, MTech (RA), 2024 -

Rahul Vigneswaran, MTech (RA), 2023 - 26 (Next: Research Fellow, Microsoft Research) (Reliance Foundation Fellow, Silver Medal for Academic Excellence in MTech in CSE)

Syed Imam Ali, MTech (TA), 2025 - 26 (Next: Samsung)

Digvijaysing Rajput, MTech (TA), 2025-26

Rakesh Kumar Reddy P, MTech (TA), 2025-26

Susmit Agrawal, MTech (RA), 2022 -25 (Next: PhD, Tubingen Univ) (Reliance Foundation Fellow)

Yug Patel, MTech (TA), 2024 - 25 (Next: Amazon)

Nikhil Patel, MTech (TA), 2024-25 (Next: Flipkart)

Lt Col Santosh Kumar Singh, 2023 - 24 (Next: Indian Armed Forces)

Poojan Samirbhai Dharaiya, MTech (TA), 2022 - 23 (Next: Endowus)

Ayan Kumar Pahari, MTech (TA), 2022 - 23 (Next: Razorpay)

Amit Kumar, MTech (TA), 2022 - 23 (Next: Mercedes Benz)

Bhavya Kanzariya, MTech (TA), 2022 - 23 ([Next: Blend360](#))

Vimal K B, MTech (RA), 2021 - 23 ([Next: Samsung Research](#)) ([Silver Medal for Academic Excellence in MTech in AI](#))

Sumitra Malagi, MTech (TA), 2021 - 22 ([Reliance Foundation Fellow, Silver Medal for Academic Excellence in MTech in CSE](#))

Sri Harsha, MTech (TA), 2021 - 22 ([Next: Google](#)) ([Reliance Foundation Fellow](#))

Shivangana Rawat, MTech (RA), 2020 - 23 ([Next: Fujitsu AI Research](#))

Pranoy Panda, MTech (RA), 2020 - 23 ([Next: Fujitsu AI Research](#))

Vaasudev Narayanan, MTech (RA), 2020 - 23 ([Next: Amazon](#)) ([Reliance Foundation Fellow, Silver Medal for Academic Excellence in MTech in CSE](#))

Nishit Shah, MTech (RA), 2020 - 21 ([Next: Amazon](#))

Kunal Kadian, MTech (TA), 2019 - 21 ([Next: Amazon](#)) ([Silver Medal for Academic Excellence in MTech in AI](#))

Chaitanya Devaguptapu, MTech (RA), 2019 - 22 ([Next: Fujitsu AI Research](#)) ([Indo-Canadian Shastri Student Research Fellow](#))

Sai Eswar Garapati, 2019 - 20 ([Next: Broadcom](#))

Rohit Dubey, 2019 - 20 ([Next: PhD at IIT-Hyderabad \(External\), Micron Technologies](#))

Smruti Charkha, 2019 - 20

Uttaran Sinha, 2018 - 21 (Co-advisor, Advisor: Dr Saurabh Joshi, IIT-H) ([Next: RA at IIT-Hyderabad](#))

Sai Vikas Desai, MTech (RA), 2017 - 20 ([Next: Qualcomm, Hyderabad](#)) ([Excellence in Research Award in CSE, 2020](#))

Piyushi Manupriya, MTech (RA), 2018 - 20 ([Next: PhD student, IIT-Hyderabad](#))

Nehal Mangain, MTech (TA), 2018 - 19 ([Next: Toyota Research, Japan](#)) ([Silver Medal for Academic Excellence in MTech in CSE](#))

Mehak Sehra, MTech (TA), 2016 - 18 ([Next: Microsoft](#))

Krishnakant Singh, MTech (RA), 2017 - 18 ([Next: Rakuten Research, Japan](#))

Supriya Pandhre, MTech (RA), 2015 - 18 ([Next: Adobe -> TCS Research -> Max Planck -> PhD student, Simon Fraser Univ](#))

Mausam Jain, MTech (TA), 2015-17 ([Next: Rakuten, Japan](#))

Bharat Bhusan Sau, MTech (TA), 2014-16 ([Next: Mobiliya R&D, Bangalore](#))

Mittul Desai, MTech (TA), 2014-16 ([Next: Founder/CEO of Evangelysis, Bangalore](#))

Anjali Singh, MTech (TA), 2013-15 ([Next: Strand Life Sciences, Bangalore -> Google](#))

Parag Jain, MTech (TA), 2013-15 ([Next: Amazon -> IBM Research -> PhD student, Univ of Edinburgh](#))

Research Assistants (Project Staff)

Lokesh Badisa, 2025 - (Prev Affiliation: BTech AI, IIT-Hyderabad)

Sriabhirath Reddy Sangala, 2025 - 25 ([Next: Research Fellow, Microsoft Research](#))

Kunal Tilaganji, 2025 - (Prev Affiliation: World Peace University, Maharashtra; Frobe.ai)

Poornima Jain, 2024 - 24 ([Next: PhD, IIT-Hyderabad](#))

Vatsala Nema, 2023 - 24 ([Next: Research Associate, Brown University](#))

Sri Siddarth Chakravarthy, 2023 - 24 ([Next: MS, Georgia Tech](#))

Aditya Pola, 2022 - 23 ([Next: MTech, IIT-Hyderabad](#))

Harsharaj Pathak, 2022 - 24 (Prev Affiliation: ISI-Kolkata; NFerence)

Saketh Bachu, 2022 - 23 ([Next: MS, UC-Riverside](#))

Charchit Sharma, 2022 - 23 (Prev Affiliation: SKIT-Jaipur/Infosys)

Arjun Ashok, 2021 - 22 ([Next: Researcher, MILA/ServiceNow Research](#))

Sriranjani Ramakrishnan, 2021 - 22 ([Next: Researcher, American Express AI Labs](#))

Deepayan Das, 2021 - 23 ([Next: Researcher, INRIA, France](#))

Divyagna Bavikadi, 2021 - 22 ([Next: PhD, Arizona State University](#))
 Siddharth Pilli, 2021 - 22 ([BYJU's Young Genius Award 2022](#))
 Rahul Vigneswaran, 2019 - 22 ([Next MTech, IIT-Hyderabad](#))
 Benin Godfrey, 2020 - 22 ([Next: United Nations Information and Communication Technologies Task Force](#))
 Rishabh Lalla, 2021 - 25 ([Next: PhD, MBZUAI, Abu Dhabi](#))
 Monish Keswani, 2021 - 21 ([Next: Researcher, Center for Machine Perception, Czech Technical University, Prague](#))
 Akshay Chandra, 2019 - 21 ([Next: Masters, Univ of Freiburg](#))
 Gaurav Bhatt, 2019 - 21 ([Next: PhD, Univ of British Columbia](#))
 Uttaran Sinha, 2019 - 21 ([Next: Applied Scientist, Amazon](#))
 Neha Tarigopula, 2020 - 21 ([Next: PhD, EPFL](#))
 Sai Srinivas, 2019 - 20 ([Next: PhD, IIT-Hyderabad](#))
 Shivam Chandhok, 2019 - 20 ([Next: RA, MBZUAI, Abu Dhabi -> INRIA, France](#))
 Vaasudev Narayanan, 2020 - ([Next: MTech, IIT-Hyderabad](#))
 Radhika Dua, 2019 - 20 ([Next: Masters, KAIST, South Korea](#))
 Sandeep Inuganti, 2019 - 20 ([Next: Masters, University of Tübingen, Germany](#))
 Rahul Nittala, 2019 - 20 ([Next: Masters, Saarland Univ, Germany](#))
 Harshitha Machiraju, 2018 - 19 ([Next: PhD, EPFL](#))
 Satwik Kondamudi, 2018 - 19 ([Next: Deep Learning and Computer Vision R&D, Ernst and Young](#))
 Aditya Chattopadhyay, 2017 - 18 ([Next: PhD, Johns Hopkins Univ under Prof Rene Vidal](#))

ACM UPLINK Interns (funded via the ACM UPLINK program)

Yash Kulkarni, Summer 2026
 Yadynesh Sonale, Summer 2026
 Abhay Bhandarkar, Summer 2025 ([Next: Research Intern, Microsoft Research](#))
 Teena Joseph, Summer 2025 ([Next: Research Intern, Microsoft Research](#))
 Arnav Samal, Summer 2025 ([Next: Research Intern, IISc -> Masters, CMU](#))
 Arnav Devalapally, Summer 2024 ([Next: Masters, Univ of Michigan, Ann Arbor](#))

Undergraduate Students (mentored on Honors thesis/undergrad research project)

Swapnil Bag, BTech mini-project, 2025-26 ([Next: Masters, EPFL](#))
 Bonthu Mani Hemanth Reddy, BTech mini-project, 2025-26 ([Next: Masters, CMU](#)), [President of India Gold Medal](#)
 Divya Mehul Rajparia, BTech mini-project, 2025-26 ([Next: Draco AI, Bay area startup](#))
 K S Ananth, BTech mini-project, 2025-26 ([Next: Research Intern, Microsoft Research](#))
 Rahul Ramachandran, BTech mini-project, 2024-25 ([Next: PhD, Univ of Illinois Urbana Champaign](#)), [President of India Gold Medal](#)
 Tejal Kulkarni, BTech mini-project, 2024-25 ([Next: Masters, UCSD](#))
 Srinith Dasari, BTech mini-project, 2024-25 ([Next: KLA](#))
 Aditya Sridhar, BTech mini-project, 2024-25 ([Next: Honeywell US](#))
 Kartik Srinivas, BTech mini-project, 2023-24 ([Next: Masters, CMU](#))
 Tanmay Garg, BTech mini-project, 2022-24 ([Next: Masters, CMU](#))
 Chirag Mehta, BTech mini-project, 2023-24 ([Next: KLA](#))
 Gautham Bellamkonda, BTech mini-project, 2023-24 ([Next: KLA](#))
 Karthik Balaji, BTech mini-project, 2022-23 ([Next: Masters, CMU](#)), [President of India Gold Medal](#)
 Tarun Ram Menta, BTech mini-project, 2022-23 ([Next: Adobe MDSR](#)), [IIT-H Research Appreciation](#)

Award, Silver Medal for Academic Excellence, BTech in AI

Soumi Chakraborty, BTech mini-project, 2022-23 ([Next: Masters, UCSD](#))

Nandita Tunuguntla, BTech mini-project, 2022-23

Manoj Gayala, BTech mini-project, 2022-23 ([Next: Microsoft](#))

Vedant Singh, BTech mini-project, 2019-22 ([Next: APT Portfolio](#)), **IIT-H Research Appreciation Award**

Sowrya Gali, BTech Honors thesis, 2020-22 ([Next: Masters student, Columbia University](#)), **IIT-H Research Appreciation Award**

Raj Patil, BTech mini-project, 2019-22 ([Next: Goldman Sachs, Bangalore](#))

Karan Bhukar, BTech mini-project, 2019-22 ([Next: IBM Research India, Delhi](#))

Shreyas Havaladar, BTech mini-project, 2019-22 ([Next: Google Research Pre-Doctoral Fellow, Bangalore](#))

Nishant Reddy, BTech mini-project, 2020-22 ([Next: Goldman Sachs, Bangalore](#))

Tarun Ram Menta, BTech mini-project, 2020-present

Surgan Jandial, BTech mini-project, 2018-21 ([Next: Adobe](#)), **IIT-H Research Appreciation Award**

Puneet Mangla, BTech thesis, 2018-21 ([Next: Adobe](#)), **IIT-H Research Appreciation Award**

Yash Khasbhave, BTech thesis, 2019-21 ([Next: Microsoft, Hyderabad](#))

Devansh Agarwal, BTech mini-project, 2019-20 ([Next: Amazon, Hyderabad](#)), **Silver Medal for Academic Excellence, BTech in Engineering Science**

Ninad Akolekar, BTech mini-project, 2019-20

Udit Maniyar, 2020 ([Next: Amazon, Hyderabad](#))

Sukrut Rao, BTech mini-project, 2017-19 (**Honda Y.E.S. Fellow, President of India Gold Medal**) ([Next: PhD student, Max Planck Institute](#))

Vaibhav Sinha, BTech mini-project, 2017-19 (**Gold Medal for Academic Excellence and Extracurricular Activities**) ([Next: Masters student, UT-Austin](#))

Vishwak Srinivasan, BTech mini-project, 2017-present (**S N Bose Fellow**) ([Next: Masters in ML, CMU -> Visiting Scientist, Facebook AI Research -> PhD student, MIT](#))

Sneha Reddy K, BTech Honors project, 2017-present (**Viterbi Fellow, Gold Medal for Academic Excellence and Extracurricular Activities**) ([Next: Google AI Residency Fellow](#))

Ayushi Patel, BTech Honors project, 2017-18 ([Next: Masters student, UIUC](#))

Yash Chandarana, BTech Honors project, 2017-18 ([Next: Masters student, CMU](#))

Arjun D'Cunha, BTech Honors project, 2017-18 ([Next: Masters student, Columbia Univ](#))

Bhavana Jain, BTech Honors project, 2017-18 ([Next: Facebook AI Residency Fellow -> Masters, UIUC](#))

Ramakrishna R M, BTech Honors project, 2017-18 ([Next: Masters student at IDSIA, Switzerland](#))

Tanya Marwah, BTech Honors project, 2016-17 ([Next: Masters in Robotics, CMU -> PhD in ML, CMU](#))

Akshita Mittel, BTech Honors project, 2016-17 ([Next: Masters in CV, CMU -> NVIDIA](#))

Sreekar Reddy, BTech Honors project, 2016-17 ([Next: Masters student, University of Massachusetts -> Facebook](#))

Phaneendra, BTech Honors project, 2016-17 ([Next: Salesforce, Hyderabad](#))

Sahil Manocha, BTech Honors project, 2016-17 ([Next: Masters student, Columbia University -> Microsoft](#))

Hrishikesh Vaidya, BTech Honors project, 2016-17 ([Next: Masters student, Columbia University -> Pinterest](#))

Surya Teja Chavali, BTech mini-project, 2015-17 ([Next: Masters student, University of Wisconsin, Madison -> PathAI](#))

Akilesh B, BTech Honors project, 2016-17 ([Next: Adobe R&D, India -> Masters student, MILA, Montreal](#))

Abhay Gupta, BTech Honors project, 2015-16 ([Next: Microsoft -> Masters in CV, CMU](#))

Richik Jaiswal, BTech Honors project, 2015-16 ([Next: Hikari-Tsushin, Japan -> Masters student, New York University](#))

Rohit M Reddy, BTech Honors project, 2015-16 ([Next: Masters student, New York University](#))

Aditya Kamath, BTech Honors project, 2014-15 ([Next: Masters in CS, Georgia Tech -> Salesforce, California, USA](#))
Aradhya Biswas, BTech Honors project, 2014-15 ([Next: PhD in CS, Georgia Tech](#))
Rishu Agrawal, BTech Honors project, 2014-15 ([Next: Masters student, ETH-Zurich](#))
Sanjoti Thakare, BTech Honors project, 2014-15 ([Next: Salesforce](#))
Ritvik Jaiswal, BTech Honors project, 2014-15 ([Next: Masters student, UC, San Diego](#))
Nayan Panaganti, BTech Honors project, 2013-14 ([Next: Qualcomm](#))
Deepak Angadi, BTech Honors project, 2013-14 ([Next: Masters student, USC -> Exponential Machines, ML startup, Hyd](#))
David Hayden, BS Honors Thesis co-mentor, 2009-11, ASU ([Next: PhD student at MIT](#))