Tejaswi KASARLA

EXPERIENCE

Computer Vision Researcher
Robert Bosch

May 2019 - Aug 2021 | Bangalore, India

autonomous driving | multi-sensor perception

- Lead the research and development of pipeline for multi-sensor (LiDAR, RADAR and camera) perception.
- Resulting annotation and perception tool internally adopted for data annotation pipeline.

Research Intern
Robert Bosch

Jun 2018 - Oct 2018 | Hyderabad, India

computer vision | autonomous driving

- Research on efficient semantic segmentation techniques for autonomous driving.
- Proposed a novel ensemble-based distillation method applied to compact segmentation networks like ENet.

Research Fellow
Center for Innovation, LVPEI

Aug 2015 - Jan 2016 | Hyderabad, India

healthcare | software development | computer vision

- Developed an eye tracking software tool for Pediatric Perimeter to quantify the visual field of infants, enabling early detection of visual field issues in clinical environments.

EDUCATION

Ph.D., Artificial Intelligence
University of Amsterdam

Oct 2021- Sep 2025 | Amsterdam, Netherlands

- PhD advisors : Pascal Mettes and Rita Cucchiara.
- Research focus : Generalization of visual data representations using non-Euclidean embedding spaces (hyperspherical and hyperbolic manifolds), with applications in open-world detection and multimodal models.
- ELLIS PhD; collaboration with University of Modena.

Master of Science, Computer Science
IIIT Hyderabad

Aug 2016- May 2019 | Hyderabad, India

- Courses on AI including Image Processing, ML, CV, RL, Parallel Computing and Convex Optimization.
- MS advisors : C.V. Jawahar and Vineeth N. Balasubramanian. Thesis on "Efficient Semantic Segmentation", applied to autonomous driving. link
- Final Grade : 7.17/10

Bachelor of Technology, Electrical and Electronics Engineering
JNTU Hyderabad

Sep 2011-May 2015 | Hyderabad, India

- Final Grade : 84%

SKILLS

DL Frameworks : Pytorch (2020-present, R&T), Tensorflow (2018-2021, R) R - Research, T - Teaching

Programming Languages : Python (2016-present) and C++ (2015-2016)

Additional skills git (2016-present), Adobe Illustrator and InDesign (2021-present)

FEATURED PUBLICATIONS AND PREPRINTS

* equal first-authorship † equal advising

- Tobia Poppi*, Tejaswi Kasarla*, Pascal Mettes, Lorenzo Baraldi, Rita Cucchiara : **Hyperbolic Safety-Aware Vision-Language Models**. CVPR 2025. [Highlight - Top 13.5%] webpage

  TL;DR : The paper proposes HySAC, Hyperbolic Safety-Aware CLIP, which models hierarchical safety relations to enable effective retrieval of unsafe content, dynamically redirecting it to safer alternatives for enhanced content moderation.

- Tejaswi Kasarla, Max van Spengler, Pascal Mettes : **Balanced Hyperbolic Embeddings are Natural Out-of-Distribution Detectors**. Preprint.

  TL;DR : The paper shows that hyperbolic learning is particularly well suited for OOD detection by using balanced hyperbolic embeddings to capture label hierarchies. The approach involves first learning the hierarchy, then training the model to align input data with these embeddings for better OOD generalization.

- Tejaswi Kasarla, Gertjan J. Burghouts, Max van Spengler, Elise van der Pol, Rita Cucchiara, Pascal Mettes : **Maximum Class Separation as Inductive Bias in One Matrix**. NeurIPS 2022. [Oral - Top 6.8%] paper

  TL;DR : The paper introduces a closed-form solution to incorporate optimal class separation in deep networks that generalize to long-tailed and open-world settings. This requires disentagling classification and separation in a network - first separating class vectors angularly, then aligning inputs with them.

CONFERENCE AND WORKSHOP PUBLICATIONS

- Thomas Wiggers, Melika Ayoughi†, Tejaswi Kasarla†, Paul Groth, Pascal Mettes : **Exemplar-free Continual Representation Learning with Symmetric Distillation**. Preprint.

  Own contributions : Advised in ideation, model development and experiment design. Contributed to writing.

- Tejaswi Kasarla, Abhishek Jha, Faye Tervoort, Rita Cucchiara, Pascal Mettes : **Maximally Separated Active Learning**. ECCV 2024 Beyond Euclidean workshop paper

  Own contributions : Proposed application to active learning. Advised in model development and experimental setup. Integrated the existing active learning pipeline implemented by Faye into DeepALPlus toolkit. Lead the writing of the paper.

- Judith Dijk, Gertjan J. Burghouts, Kapil D. Katyal, Bryanna Y. Yeh, Craig T. Knuth, Ella Fokkinga, Tejaswi Kasarla, Pascal Mettes : **Lightweight Uncertainty Quantification with Simplex Semantic Segmentation**. ICRA 2024 workshops. paper

  Own contributions : Advised in experiment design. Contributed to writing.

- Tejaswi Kasarla, G. Nagendar, Guruprasad Hegde, Vineeth N. Balasubramanian, C.V. Jawahar : **Region-Based Active Learning for Efficient Labeling in Semantic Segmentation**. Winter Conference on Applications in Computer Vision (WACV), 2019 paper

I have served as a reviewer for : ML (ICLR 2025, ICLR 2024, NeurIPS 2023), Vision (CVPR 2025, ECCV 2024, ICCV 2023) venues and DEI workshops (WiCV- 2021 onwards, WiML- 2019 onwards)

TALKS

Jun 2024	Invited Talk on "Hyperbolic Geometry and Learning for Computer Vision"; at AImageLab, University of Modena and Reggio Emilia, Italy
Sept 2023	Invited Talk on "Maximum Class Separation as Inductive Bias in One Matrix"; at the Netherlands Conference on Computer Vision (NCCV) 2023. Link
Nov 2022	Contributed Talk on "Maximum Class Separation as Inductive Bias in One Matrix"; at the Women in Machine Learning Workshop , NeurIPS 2022. Video

WORKSHOPS AND SESSIONS CO-ORGANIZED

2024	*Technical Committee*, Beyond Euclidean Workshop (ECCV 2024 Workshop).
2022	*Program co-chair*, Women in Computer Vision (CVPR 2022 Workshop). Report
2021	*Organizer*, Women in Computer Vision Networking Session (ICCV 2021 Socials).
2021	*Program co-chair*, Women in Computer Vision (CVPR 2021 Workshop). Report

TEACHING AND SUPERVISION

2021-23	**Teaching Assistant**; Applied Machine Learning course – University of Amsterdam. Led tutorials, designed and supervised course projects for 200+ students.
2025	**Master's Thesis Supervision**; Co-supervising three theses on object centric learning, fine-grained classification of biological data and hyperbolic geometry for GNNs.
2024	**Master's Thesis Supervision**; Co-supervised two theses on hyperbolic image retrieval and exemplar-free continual learning, latter submitted to ICLR 2025.
2023	**Master's Thesis Supervision**; Supervised thesis on active learning on hypersphere, published at ECCVW 2024.

OUTREACH AND INCLUSION

Passionate about supporting diversity in AI research by leading change and mentoring underrepresented groups.

2023-now	**Board Member**; Women in Computer Vision (WiCV).

2022-now Mentor; Inclusive AI Program, University of Amsterdam. (Students mentored : 4)
2022 Mentor; WiML Mentorship Program

SELECT HONORS AND AWARDS

2024 ELLIS PhD Mobility Grants (2024); for research visit at University of Modena with Rita Cucchiara.
2022 NeurIPS Scholar Award; to cover conference registration and stay for NeurIPS 2022
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