Tejaswi KASARLA

EXPERIENCE

Research Scientist Intern
Meta FAIR

Jun 2025 - Dec 2025 | Paris, France

Multimodal LLMs | World Models

- Developed belief state extraction and mental world modeling for wearable agents
- Developed data filtering pipeline for 100M video-action dataset.

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 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- Present | 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

- **Action100M : A Large-Scale Dense Video Action Dataset**. Delong Chen, Tejaswi Kasarla, Yejin Bang, Mustafa Shukor, Willy Chung, Jade Yu, Allen Bolourchi, Théo Moutakanni, Pascale Fung. Preprint 2026. webpage

  TL;DR : We introduce Action100M, a 100M-action open-domain dataset for learning inverse dynamics and open-vocabulary action understanding. Using an automated pipeline that combines multiple frontier foundation models to generate hierarchical labels, we create large-scale, high-quality supervision and show that training video-based CLIP models on Action100M significantly improves zero-shot video action recognition.

- **Hyperbolic Safety-Aware Vision-Language Models**. Tejaswi Kasarla*, Tobia Poppi* , Pascal Mettes, Lorenzo Baraldi, Rita Cucchiara. 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.

- **Balanced Hyperbolic Embeddings are Natural Out-of-Distribution Detectors**. Tejaswi Kasarla, Max van Spengler, Pascal Mettes. ArXiv 2025.

  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.

- **Maximum Class Separation as Inductive Bias in One Matrix**. Tejaswi Kasarla, Gertjan J. Burghouts, Max van Spengler, Elise van der Pol, Rita Cucchiara, Pascal Mettes. 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

- **VL-JEPA : Joint Embedding Predictive Architecture for Vision-language**. Delong Chen*, Mustafa Shukor*, Théo Moutakanni*, Willy Chung*, Jade Yu, Tejaswi Kasarla, Allen Bolourchi, Yann LeCun, Pascale Fung. Preprint 2025 paper

  Own contributions : Benchmarking VL-JEPA on temporal action segmentation, paper writing.

- **HierVision : Standardized and Reproducible Hierarchical Sources for Vision Datasets**. Tejaswi Kasarla, Ruthu Hulikal Rooparaghunath, Stefano D'Arrigo, Gowreesh Mago, Abhishek Jha, Melika Ayoughi, Swasti Shreya Mishra, Ana Manzano Rodríguez, Teng Long, Mina Ghadimi Atigh, Max van Spengler, Pascal Mettes. ICCV 2025 Beyond Euclidean workshop [Oral] paper

  Own contributions : Ideation, paper writing and dataset hierarchy standardization.

- **Exemplar-free Continual Representation Learning with Symmetric Distillation**. Thomas Wiggers, Tejaswi Kasarla†, Melika Ayoughi†, Paul Groth, Pascal Mettes. Preprint 2025.

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

- **Maximally Separated Active Learning**. Tejaswi Kasarla, Abhishek Jha, Faye Tervoort, Rita Cucchiara, Pascal Mettes. 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.

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

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

- **Region-Based Active Learning for Efficient Labeling in Semantic Segmentation**. Tejaswi Kasarla, G. Nagendar, Guruprasad Hegde, Vineeth N. Balasubramanian, C.V. Jawahar. WACV 2019 paper

I have served as a reviewer for : ML (NeurIPS 2025, ICLR 2025, ICLR 2024, NeurIPS 2023), Vision (CVPR 2026, CVPR 2025, BEW@ECCV 2024, 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

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

2025 **Teaching Assistant**; Foundation Models course – University of Amsterdam. Supervised students on a research-based course project on Multimodal LLMs.

2025 **Master's Thesis Supervision**; Co-supervising three theses on object centric learning, fine-grained classification of biological data and hyperbolic geometry for GNNs.

2021-23 **Teaching Assistant**; Applied Machine Learning course – University of Amsterdam. Led tutorials, designed and supervised course projects for 200+ students.

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**; 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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