Skanda Bharadwaj

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Education

Pennsylvania State University
Ph.D. in Computer Science and Engineering   Aug 2019 – Dec 2026
M.Sc. in Computer Science and Engineering

PES Institute of Technology
B.Tech in Telecommunications Engineering   Jan 2019 – May 2021

Specialization: Computer Vision, Recommendation Systems, Content Understanding

Work Experience

Machine Learning Engineer Intern @ Meta – Bellevue, WA   June 2025 – Aug 2025
- Designed and implemented the A2A2U pipeline, leveraging KNN clustering and engagement signals from top creators to recommend high-potential users for emerging creators with strong external followings, addressing the cold start problem.
- Developed the A2U2U pipeline, integrating LLM-based embeddings and user clustering to expand creator reach by mapping them to fine-grained interest clusters.
- Achieved >99.9% creator coverage improvement (26K+ newly onboarded creators) in offline experiments and delivered scalable outputs integrated into Meta's recommendation systems.

Research Scientist Intern @ SLB-Doll Research – Cambridge, MA   June 2024 – Aug 2024
- Developed a real-time image processing pipeline to segment methane plumes, enhancing environmental monitoring systems.
- Integrated traditional image processing with deep learning classifiers for improved leak detection and localization.

Computer Vision Engineer @ Continental – Bengaluru, India   July 2015 – Dec 2018
- Played a key role in the development of multi-object tracking using an Extended Kalman Filter for the Traffic Sign Recognition component for automotive cameras and extended technical support to BMW, Toyota, and Honda projects for tracker-based issues.
- Developed mathematical models for road-marking sign recognition, uncertainty estimation, and automation tools to evaluate tracker performance for accurate depth estimation.

Research

Research Assistant @ LPAC   Aug 2021 – Present
- **Recurrence-based Vanishing Point Detection (R-VPD):** Enhancing vanishing point detection by leveraging recurring patterns and learning structured latent VP representations through a transformer-VAE framework.
- **Vision to Dynamics:** Investigation into using a cross-modality approach for regressing foot pressure distribution, foot contact, and center of mass from visual input, leveraging spatiotemporal information from pose sequences and enabling the estimation of human stability.

Research Assistant @ UIT Lab   Jan 2019 – May 2021
- **Ultrasound Image Tracking Enhancement:** Investigation into the integration of Siamese convolutional neural networks with Kalman filtering to enhance tracking accuracy in ultrasound imaging.

Selected Publications   Google Scholar

- **Skanda Bharadwaj**, R. T. Collins and Y. Liu, "Recurrence-based Vanishing Point Detection", In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)* February 2025, pp. 8909–8918. [Paper]
- K. Y. Kraiger, J. Li, **Skanda Bharadwaj**, Y. Liu, and R. T. Collins, "Estimating Foot Pressure and Stability from Visual Input", In *British Machine Vision Conference (BMVC)*, 2025 *to appear*.
- Shimian Zhang, **Skanda Bharadwaj**, Keaton Kraiger, Yashasvi Asthana, Hong Zhang, Robert Collins, and Yanxi Liu, "Novel 3D Scene Understanding Applications From Recurrence in a Single Image", *arXiv preprint* 2022. [Paper]
- **Skanda Bharadwaj**, Sumukha Prasad, Mohamed Almekkawy, "An Upgraded Siamese Neural Network for Motion Tracking in Ultrasound Image Sequences", *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 68(12):3515-3527, 2021. [Paper]