

EKTA BALKRISHNA GAVAS

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Professional Experience

Research Intern *New York University, Brooklyn, NY, USA* **Feb 2025 – Present**

- Conducting research on **facial age estimation** problems with a focus on modern **generative AI** and deep learning techniques, contributing to publishable findings.

Senior ML Engineer *Samsung R&D Institute, Bangalore, India* **Jul 2022 – Nov 2023**

- Collaborated with the **CTO team** to develop and optimize lightweight object detection models involving deep learning techniques like **transformers** and **diffusion models** for Samsung's **S23/S24 series**, improving performance by **15%**.
- Played a key role in rapid prototyping and implementing resource-efficient fine-grained classification models for Samsung's **AI Gallery** application, leading to a performance enhancement of **30%** within the **Visual Intelligence Team**.

Graduate Research Assistant (*Advisor: Dr. Anoop N.*) *CVIT, IIIT Hyderabad* **Dec 2019 – Dec 2022**

- Modeled **fingerprint enhancement** on synthetic and real images, boosting matching performance by **46%**. Pioneered a novel method for robust **representation learning** through self-supervised enhancement pre-training. (*Thesis Link*)
- Benchmarked indices in **Faiss** library to achieve 9 queries/sec, balancing time-accuracy trade-offs for efficient searching across a **large-scale dataset** of 45M samples and ensuring optimal performance with continuous resource monitoring.

Teaching Assistant *IHub-Data, IIIT Hyderabad, India* **Jun 2021 – Jul 2022**

- Collaborated with researchers and faculties to develop course content, conducted **45+ weekly labs**, enhancing learning outcomes for **290+ students** from pan India in the “Foundations of Modern Machine Learning-2021” program. (*Link*)

Associate Software Engineer *Jeavio (India) Pvt. Ltd.* **May 2018 – Jan 2019**

- Developed, and tested **front-end modules** for high-traffic bookings portal in Angular 6. Integrated robust **RESTful APIs** in Node.js within an Agile framework, improving user experience, data interchange and client service operations.
- Built and tested **Python APIs** for advanced network solutions boosting network efficiency and reliability by **30%**.

Education

International Institute of Information Technology (IIIT) Hyderabad **Feb 2024**

MS by Research, CSE with AI specialization (CGPA: 8.83/10.00)

Telangana, India

The Maharaja Sayajirao University of Baroda **Apr 2018**

Bachelor of Engineering, CSE (GPA: 3.99/4.00)

Gujarat, India

Publications

- Gavas, E., Olpadkar, K., & Namboodiri, A. “**Enhancement-Driven Pretraining for Robust Fingerprint Representation Learning**”, VISAPP 2024: Introduced a self-supervised pre-training strategy for fingerprint representation learning on noisy datasets, boosting matching performance. (*Link*)
- Gavas, E. and Namboodiri, A. “**Finger-UNet: A U-Net Based Multi-Task Architecture for Deep Fingerprint Enhancement**”, VISIGRAPP 2023: Enhanced low-quality fingerprint images using a modified U-Net with wavelet attention and multi-task learning, incorporating domain knowledge for improved recognition performance. (*Link*)
- Olpadkar, K., & Gavvas, E. “**Center Loss Regularization for Continual Learning**”, arXiv 2021: Proposed an efficient center loss regularization method for continual learning to mitigate catastrophic forgetting in neural networks, with minimal computational overhead. (*Link*)
- Gavas, E., & Olpadkar, K. “**Deep CNNs for peripheral blood cell classification**”, arXiv 2021: Achieved 99.51% accuracy in classifying peripheral blood cells using deep CNN models, helpful in hematologic disorder detection. (*Link*)

Skills

Languages & Tools: Python, PyTorch, Sklearn, C++, TensorFlow, MLFlow, Java, Git, Docker, Slurm, SQL, AWS, GCP

Relevant Coursework: Computer Vision, Statistical Methods in AI, Deep Learning, Digital Image Processing, Software Engineering, Data Structures & Algorithms, Object Oriented Programming, Linear Algebra, Databases, Math & Statistics

Soft skills: Effective communicator and team player adept at delivering high-quality projects in cross-functional teams. Skilled problem-solver able to adapt to dynamic environments, drive positive outcomes and pay attention to detail.