Ekta Gavas

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Education

International Institute of Information Technology, Hyderabad **July 2019 – February 2024**
Master of Science by Research, Computer Science and Engineering (CGPA: 8.83/10.00) *Hyderabad, Telangana*

The Maharaja Sayajirao University of Baroda **July 2014 – April 2018**
Bachelor of Engineering, Computer Science and Engineering (GPA: 3.99/4.00) *Vadodara, Gujarat*

Relevant Coursework

Computer Vision, Statistical Methods in AI, Deep Learning-Theory and Practices, Digital Image Processing, Software Engineering, Data Structures & Algorithms, Object Oriented Programming, Network Security, Databases, Math & Statistics

Technical Skills

Languages & Frameworks: Python, C/C++, Java, JS, Matlab, ReactJS, NodeJS, Angular, SQL
Scientific computing & analysis: NumPy, SciPy, Pandas, Scikit-learn
Data Visualization: Matplotlib, Seaborn, Plotly, MLFlow, TensorBoard
Deep Learning Frameworks : PyTorch, CUDA, TensorFlow, Keras
Miscellaneous Tools & Technologies : Git, Docker, Slurm, Google Cloud, SNAP

Experience

Senior Engineer (ML) *Samsung R&D Institute, Bangalore* **July 2022 – November 2023**
- Designed, built and delivered image models with performance improvement of 30% for complex visual processing tasks in AI Gallery for S23/24 solutions.

Graduate Research Assistant *(Advisor: Dr. Anoop N.) CVIT, IIIT Hyderabad* **December 2019 – 2023**
- **Biometrics with Deep Learning:** Trained a deep neural network for **fingerprint enhancement** on synthetic images from Anguli and Sfinge generators and improved fingerprint **matching performance**. Utilized learned features for **minutia extraction**. Reused trained encoder for robust representation learning in self-supervised paradigm.
- **Large-scale similarity search:** Benchmarked various indices available in **Faiss library** to minimize time-accuracy trade-off targeted to achieve **9 qps** with a **large gallery of 45M samples** along with resource monitoring.

Teaching Assistant *IHub-Data, IIIT Hyderabad* **June 2021 – July 2022**
- Worked closely with the professors in preparing course material, conducting labs, doubt-solving sessions, and evaluating projects for 290+ students for the program **Foundations of Modern Machine Learning-2021**.

Associate Software Engineer *Jeavio (India) Pvt. Ltd.* **May 2018 – January 2019**
- Designed, developed and tested various **front-end modules for resorts and snow sports bookings** portal in Angular 6. Also, **developed and integrated REST APIs** in NodeJS following Agile methodology.
- Developed and tested **Python APIs for network solutions** (Wifi and SDWAN).

Projects and Publications

- **Enhancement-Driven Pretraining for Robust Fingerprint Representation Learning** *(paper)*: Proposed a semi-supervised pre-training strategy for fingerprint representation learning and fingerprint verification.
- **Finger-UNet: A U-Net based Multi-Task Architecture for Deep Fingerprint Enhancement** *(paper)*: Designed an U-Net-based fingerprint enhancement approach utilising domain knowledge and wavelet transform.
- **Center Loss Regularization for Continual Learning** *(paper)*: Designed an efficient continual learning method using center loss which is competitive with recent regularization strategies **utilizing minimal additional memory**.
- **Deep CNNs for Peripheral Blood Cell Classification** *(paper)*: Applied transfer learning and ensemble methods on CNN models for Blood Cell Classification. Achieved accuracy of **99.51%** beating the best so-far.
- **Avalanche***(Open-Source Contribution)*: Contributed a strategy and plugin of **regularization-based continual learning** method **Less-Forgetful Learning (LFL)** to the end-to-end continual learning library Avalanche.
- **Medical AI:** Predicted severity of **6 diseases** from clinical parameters with more than **85% accuracy** using neural networks. Developed micro-services based web application in ReactJS and Flask and deployed it on Google Cloud.