

Shailesh Sridhar

Github: github.com/ShaileshSridhar2403

LinkedIn: [linkedin.com/in/shailesh-sridhar-441baa156](https://www.linkedin.com/in/shailesh-sridhar-441baa156)

Email: shai2403@seas.upenn.edu

Mobile: (267) 928-0465

WORK EXPERIENCE

Head Teaching Assistant - Penn Engineering Online

August 2024-Present

- Led cross-functional team of 16 TAs supporting 150+ students in Big Data Analytics course, teaching concepts such as SQL, Machine Learning and Big Data Systems
- Incorporated customer feedback and implemented several improvements in course such as better, clearer homework assignments and smoother submission system

Machine Learning Engineer - Oatmeal Health (Part time)

November 2024-January 2025

- **Foundation Model Pipeline:**

Designing and implementing multi-task learning pipeline on 3D CT Scan images for lung nodule risk prediction

Fine-tuning said pipeline, which includes foundation model for CT Scans, improved performance by $\sim 4\%$

Machine Learning Engineer - MyGate

Jan 2020-March 2022

- **Semantic FAQ Search based Chatbot:**

Developed, deployed into production and maintained system for **fast Semantic text search involving FAISS indexed LLM (BERT) embeddings**. Used by thousands of customers

Collected, cleaned and annotated data

Finetuned, benchmarked and compared different LLM architectures on this FAQ retrieval task

Improved performance with downstream processing such as keyword search and spelling correction using **Gradient Boosted Decision trees**

- **NER in Addresses:** Developed a POC using CRFs and LSTMs for Named Entity Recognition in street addresses
- **Context-less language Identification:** Developed a POC to identify language in short strings | [BlogPostLink](#)
- **Real Time Computer Vision Applications on Edge devices:**
Designed training and fine-tuning regimes for quantized object detection networks, led to $\sim 8\%$ performance improvement
Proposed, implemented synthetic training data generation for license plate images with a pix2pix Generative Adversarial Network, improved performance by $\sim 4\%$
Implemented and **deployed into production** containerized microservice based pipeline for face authentication. Designed and implemented a novel efficient algorithm to select most important frames.
- **Face Authentication Pipeline tasks:** Researched and implemented efficient, parallelized facial image preprocessing methods including spoof detection and quality detection

RESEARCH EXPERIENCE

Research Associate - BrachioLab, University of Pennsylvania

April 2023-Present

- Working on reducing the bias in interpretability algorithms such as LIME and SHAP for black box machine learning models, especially **transformers** across text, tabular and vision modalities,
- **Showed and reduced bias in various LLMs using prompt engineering, statistical and optimization techniques**
- **Awarded Runner up best Thesis**

Research Associate - Nguyen Lab, Auburn University

March 2022-August 2022

- Developed Interpretability methods for **Vision-Language models** like CLIP. Discovered spurious behaviour of vision-language models where removing important image features increases model confidence

Research Assistant - To Snehanishu Saha, PES University

March 2019-Jan 2020

- Introduced a novel adaptive learning rate inspired by the lipschitz-continuity of MSE and a novel activation function for Gene Expression Inference, achieving comparable performance to a SOTA model of twice the size
- **First author publication in IJCNN 2020** | [Link](#)

EDUCATION

- **University of Pennsylvania** Philadelphia, Pennsylvania
MSE in Data Science
Teaching Assistant: Big Data Analytics, Principles of Deep Learning
2022 - 2024
- **PES University** Bangalore, India
Bachelor of Technology - Computer Science
2016 - 2020

TECHNICAL SKILLS

Python, Tensorflow, PyTorch, ONNX, TensorRT, OpenCV, Sklearn, Numpy, Pandas, Spark, R, MongoDB, SQL, Matlab, C, C++, Linux shell, Javascript, React, Node.js, Docker, AWS, GCP, LangChain