Shreeram Athreya

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Education

University of California Los Angeles — Los Angeles, CA
PhD Candidate, Electrical and Computer Engineering; GPA: 4.0 — *Sep. 2023 – Present*

University of California Los Angeles — Los Angeles, CA
MS, Electrical and Computer Engineering; GPA: 4.0 — *Sep. 2021 – Aug. 2023*

Savitribai Phule Pune University — Pune, India
Bachelor of Technology, Electronics Engineering; GPA: (9.5/10.0) — *Aug. 2016 – Oct. 2020*

Industry Experience

Omics Data Automation Inc. — Beaverton, OR
Graduate ML Intern - Precision Medicine — *Jun. 2022 – Sep. 2022*

- **Federated Learning & Predictive Modeling**: Developed privacy-preserving federated learning frameworks using PyTorch and Scikit-learn to predict patient outcomes from multimodal clinical data, supporting decentralized clinical decision-making.
- **Genomic Data Engineering**: Engineered scalable data pipelines with Pandas and NumPy for mutation frequency analysis of NCI-GDC datasets, and trained early cancer detection models, advancing AI-driven precision oncology.

Research and Teaching

Biomedical AI Research Lab, UCLA — Los Angeles, CA
PhD Candidate – Representation Learning & Medical Image Processing — *Sep. 2023 – Present*

- **Real-Time No-Reflow Prediction from Stroke Angiography**: Developed the first ML framework to predict post-EVT no-reflow immediately after reperfusion by modeling temporal perfusion dynamics from intra-procedural DSA videos and clinical variables, achieving AUROC 0.933 and significantly outperforming clinical baselines.
- **Thyroid Cancer Diagnosis**: Built an Attention Multiple Instance Learning framework that fuses ultrasound and genomic features, advancing interpretable AI for indeterminate thyroid nodules and precision oncology.
- **Ultrasound Enhancement**: Developed an image enhancement model using CycleGAN and perceptual loss, ranking top 10 in MICCAI USEnhance 2023; demonstrated expertise in unpaired image translation and generative modeling.

Depts of ECE and Mathematics, UCLA — Los Angeles, CA
Teaching Fellow — *Sep. 2021 – Present*

- **Curriculum Delivery in C++, Python, Java**: Led undergraduate courses in C++ (PIC 10A/10B), Python (PIC 16A), and Java (PIC 20A), emphasizing algorithm design, object-oriented programming, and core data structures.
- **Large-Scale Instruction and Mentorship**: Managed courses with enrollments of 250 and 550 students, achieving a 92% teaching approval rating through interactive instruction, project-based learning, and individualized mentorship that strengthened students' deep learning and programming proficiency across diverse backgrounds.

Visual Machines Group, UCLA — Los Angeles, CA
Graduate Student Researcher - AI Fairness & Computational Imaging — *Sep. 2020 – May 2023*

- **Physiological Signal Estimation & Fair Sensing**: Built a graphics-based rPPG pipeline for heart rate estimation from facial images and designed spatio-temporal correction algorithms for infrared thermometry to improve accuracy and fairness in non-contact body temperature measurement.
- **Representation Learning & Tracking**: Enhanced minority class recognition via the MIME effect and improved object tracking under occlusion using Visual Physics-based inductive biases, boosting model robustness in dynamic scenes.

Selected Publications (*Google scholar*)

- **S Athreya**, A Melehy, S Suthahar, V Ivezić et al., *Combining Ultrasound Imaging and Molecular Testing in a Multimodal Deep Learning Model for Risk Stratification of Indeterminate Thyroid Nodules*; Thyroid 2025
- **S Athreya**, A Radhachandran, V Ivezić, V Sant et al., *Enhancing Ultrasound Image Quality across Disease Domains: an Application of CycleGAN and Perceptual Loss*; JMIR Biomedical Engineering 2024
- **S Athreya***, C Olivares*, A Ismail, et al., *DSA-NRP: No-Reflow Prediction from Angiographic Perfusion Dynamics in Stroke EVT*; In revision at IEEE TMI
- A Radhachandran, A Vittalam, V Ivezić, V Sant, **S Athreya**, et al., *ThyGraph: A Graph-Based Approach for Thyroid Nodule Diagnosis from Ultrasound Studies*; MICCAI 2024