Sriram Sai Ganesh

saiganesh.3@osu.edu
sriram.bio

Education

2021–2025 **B.S. CSE**, *The Ohio State University*, *GPA: 3.78/4.*
Graduating with Honors Research Distinction in CSE.
- *Graduate Coursework:* Machine Learning, Computer Vision, Natural Language Processing (NLP), Adv. Topics in NLP, High-Performance Deep Learning, Fairness in ML, Network Science, Parallel Computing, Algorithms.

Publications

Submitted: **Crisis Observatory: Extracting Credible Signals During a Crisis in the Age of LLMs,**
COLING '25 Kuan-Chieh Lo*, Pranav Maneriker*, **Sriram Sai Ganesh**, Dominik Winecki, Kelly Garrett, Ayaz Hyder, Arnab Nandi, Valerie Shalin, Shannon Bowen, Amit Sheth, Srinivasan Parthasarathy.
Under review at the International Conference on Computational Linguistics (COLING), 2025

NSF UROP **Optimizing Transformer Models for Image Segmentation on the Edge,**
Sriram Sai Ganesh, Srinivasan Parthasarathy.
Poster presented the 2024 Summer Research Symposium at The Ohio State University.

Research Experience

2024-2025 **Vision Foundation Models on the Edge**
- *Mentor*: Prof. Srinivasan Parthasarathy
- *Domains*: Computer Vision, Tiny Machine Learning, Crisis Informatics
- *Work*: Distilling performance from SAM 2 to build a high-throughput low-resource semantic image segmentation model for inference on the edge. Applications in disaster response scenarios; ongoing Honors Thesis.

2024-2025 **Code Debugging with LLMs**
- *Mentor*: Prof. Sachin Kumar
- *Domains*: Natural Language Processing
- *Work*: Optimizing `Llama-3.1-8B` for JavaScript (JS) code debugging performance. Augmented a JS *code deobfuscation* pipeline with with an RL fine-tuned LLM. Implemented a Generated Knowledge Prompting system for chain-of-thought in-context learning to achieve 98% improvement in deobfuscation success rate.

Fall 2024 **Resource-Aware Knowledge Gap Identification**
- *Mentor*: Prof. Srinivasan Parthasarathy
- *Domains*: Computer Vision, Tiny Machine Learning
- *Work*: Detecting and classifying limitations (Knowledge Gaps) in Visual Question Answering systems for inference in resource-constrained environments. Optimizations enable computation speedup with 98% accuracy.

Summer 2024 **TinyML for Transformer Models**, *SLURM, Git*
- *Mentor*: Prof. Srinivasan Parthasarathy
- *Domains*: Computer Vision, Tiny Machine Learning
- *Work*: Optimized Meta's Segment Anything Model (SAM) for inference on the edge. Applied Flash Attention and Post-training Dynamic Quantization to achieve a 50%+ gain in image throughput for all three model sizes. Meta's SAM 2 was revealed shortly after, adapting both optimizations that we made in the core release.

2023-2024 **LLM-assisted Information Grounding**
- *Mentor*: Prof. Srinivasan Parthasarathy
- *Domains*: Natural Language Processing, Information Retrieval
- *Work*: Built an interactive demo to showcase an RAG-assisted analytics system for social media data streams. In the wake of a crisis, allows for disaster response teams to assimilate data from citizen-sensed viewpoints to filter for credible, actionable and localized geographic insights. Under review at COLING 2025.

Awards

2024 **Upsilon Pi Epsilon (UPE) Certificate of Achievement**
Awarded to attendees of the ICPC North American Championship.

2024 **Undergraduate Research Scholarship**
Merit scholarship awarded based on Honors Thesis proposal.

2023 **First Place, Hack AI @ Ohio State**
`AirPoint` – multi-modal tool enabling contact-free control of computers using hand gestures.

2023 **First Place, Buckeye CTF @ Ohio State**
Cybersecurity. Team of four solved Cryptography, Web, Binary Exploitation and Reverse Engineering challenges.

2021-2024 **Maximus Scholarship**
Merit scholarship awarded to incoming undergraduates in the College of Engineering.

Extracurriculars

2021-Present **Competitive Programming (ICPC) Club**
- Represented OSU at the 2024 ICPC North American Championship (NAC) **(top 50 teams in the US)**, team placed 35th nationally.
- **President, 2023-24**: Elected to lead club of 40+ active undergraduates. Host weekly programming practices, give lectures on a variety of topics in Data Structures & Algorithms – Binary Search, Max Flow, DP.
- **Treasurer, 2022-23**: Host OSU's two annual competitive programming competitions, with international attendance. Liaison with corporate sponsors & the College of Engineering; manage $10,000 annual budget.

2021-2024 **Buckeye Space Launch Initiative**
- Member of Ohio State's High-Powered Rocketry team, building an 11-foot O-class Student Researched & Designed (SRAD) rocket to fly to 30,000ft in the annual Intercollegiate Rocket Engineering Competition.
- **Deputy Project Manager, 2023-24**: Co-led interdisciplinary team of 60+ members. Helped manage a $30,000 budget to design, build & extensively validate subsystems of our rocket *Asteria*.
- Implemented software for *Asteria*'s payload: computer vision-assisted 3-DOF sphere stabilization (3 dimensional Stewart platform) to stabilize a biological experiment under 18Gs of acceleration during motor burn & coast.
- **Avionics Engineer, 2021-23**: Member of the Spaceport Avionics team, programming STM32-based flight computer to correctly trigger flight events (ie. main & drogue deployment, active drag system.) SRAD circuit boards (Altium) for radio, power distribution and recovery; inter-board communication over a CAN bus.

Teaching Experience

2023-Present **CSE 2331: Foundations 2 (Data Structures & Algorithms)**
- *Instructor*: Prof. Nickalaus Painter
- *Work*: In-class teaching assistant & grader for CSE 2331. Assist students with work in-class, conduct biweekly office hours, help write coding labs, and host exam review sessions for 140+ students across four sections.

2021-2024 **Code for Community (C4C @ OSU)**
- *2023-24* Project Lead: Leading 6 students on one of five C4C project teams, building `Pirate Island` – a TypeScript game to teach high schoolers how to code by building conditional statements and loops.
- Volunteer with the Columbus Center of Science and Industry (CoSI) to host events, organize workshops at Columbus area middle & high schools. Hosted coding & web design workshops of varying levels.

Work Experience

Summer 2023 **DeepKlarity**, *Remote*
- Successfully adapted open- and closed-source models for text sentiment analysis and video question-answering projects.

Summer 2022 **CGH Technologies**, *Washington D.C.*
- Built a machine learning regression model to analyze FAA Flight Data from Newark International Airport & predict Estimated Off-Block Time (EOBT).
- Employed bootstrapping and hyperparameter tuning for ensemble learning accuracy over 85%.

Projects

2023-2024 **Time Series Analysis Library**
- *Mentor*: Prof. John Paparizzos
- *Domains*: Machine Learning, Time Series Analysis
- *Work*: Building `SignalTS`, a comprehensive & adaptible time series analytics Python library. Implemented and validated time series models from academic papers & existing libraries, including SAX-VSM, BOSSVS and MrSEQL. Updated documentation & standardized version control practices adapted by all 10+ contributors.

Summer 2023 **Stroke Symptom Diagnosis**
- *Mentor*: Prof. Alper Yilmaz
- *Domains*: Computer Vision
- *Work*: Implemented pipeline for automated ischemic stroke symptom diagnosis from video data using Google's MediaPipe pose landmark detection model. Processed keypoint movement with ARIMA, achieved over 70% accuracy in detecting gait anomalies. Collaborators working towards deployment at OSU's medical center.

Technical Skills

ML Tools PyTorch, OpenCV, HF Transformers, Numpy, OpenMP, MPI

Misc. Linux, Git, SLURM, Docker, Seaborn, Plotly