Sriram Sai Ganesh Curriculum Vitae

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Education

2025–2027 **M.S.E. Computer Science**, *Johns Hopkins University*
Human Language Technologies concentration at the Center for Language and Speech Processing (CLSP)

2021–2025 **B.S. Computer Science & Engineering**, *The Ohio State University*, *GPA: 3.8/4.*
Honors Research Distinction in CS, advised by Prof. Srinivasan Parthasarathy at the Data Mining Research Lab.
- *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

ICDM '25 **Crisis Observatory: Extracting Credible Signals During a Crisis in the Age of LLMs,**
Kuan-Chieh Lo*, Pranav Maneriker*, **Sriram Sai Ganesh**, Dominik Winecki, Kelly Garrett, Ayaz Hyder, Arnab Nandi, Valerie Shalin, Shannon Bowen, Amit Sheth, Srinivasan Parthasarathy
Demo paper at the 2025 IEEE International Conference on Data Mining
- *Domains*: Natural Language Processing, Information Retrieval
- *Work*: Built an interactive demo to showcase an RAG-assisted analytics system for disaster response. Assimilates data from citizen-sensed viewpoints to filter for credible and geographically localized insights.

Research Experience

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
- *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 released shortly after, using two optimizations that we also made into the core release.

Honors Thesis **Towards Efficient and Effective Crisis Response**
- *Mentor*: Prof. Srinivasan Parthasarathy
- *Domains*: Computer Vision, Tiny Machine Learning, Crisis Informatics
- *Work*: Applications of vision & language models in disaster response scenarios: distilling performance from SAM 2 to build a high-throughput low-resource semantic image segmentation model for inference on the edge.

2024-2025 **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.

Fall 2024 **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.

Work Experience

2023-2025 **Teaching Assistant, CSE 2331 (Data Structures & Algorithms)**
- *Instructor*: Prof. Nickalaus Painter, Prof. Rephael Wenger
- *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

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

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

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

Projects

2025-Present **PanViS: Panoptic Video Scene Graph Generation**
- *Mentor*: Prof. Srinivasan Parthasarathy
- *Work*: `PanViS`, multimodal framework towards solving Panoptic (frame-spanning & pixel-precise) video segmentation. Handles entity recognition, segmentation, tracking, and temporal & spatial memory to decompose a video stream into interpretable event graphs. Downstream applications include video retrieval & QA

2023-2024 **Time Series Analysis Library**
- *Mentor*: Prof. John Paparizzos
- *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
- *Work*: Implemented pipeline for automated ischemic stroke symptom diagnosis from video data using Google's MediaPipe pose landmark detection model. Processed keypoint data with ARIMA, achieved over 70% accuracy in detecting gait anomalies. Collaborators working towards deployment at OSU's medical center

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

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

Technical Skills

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

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