Columbia, South Carolina
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Samuel Tadamatla

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Education

Columbia, South Carolina **University of South Carolina** **Aug 2025 | Jun 2028**

- BS in Computer Science, Mathematics. GPA: 4.0

Experience

Machine Learning Research Assistant **University of South Carolina** **May 2025 – Present**

Columbia, South Carolina

- Researched YOLO-based detection and OptiTrack alignment, improving UAV coordinate accuracy by 15%.
- Built Python pipelines that processed 100+ hours of flight video and telemetry for synchronization and analysis.
- Applied supervised ML models, achieving >90% classification accuracy on experimental datasets.
- Co-authored experiment reports and produced 20+ publication-quality figures using LaTeX.

Research Assistant, ARTS Lab **University of South Carolina** **May 2024 – Jul 2024**

Columbia, South Carolina

- Designed and tested water quality sensors for real-time environmental monitoring.
- Implemented embedded software for data acquisition and preprocessing.
- Integrated ML models for anomaly detection in water pH, turbidity, and conductivity measurements.
- Contributed to field experiments and validated results with 50+ sensor readings.

Skills

- Languages: Java, Python
- Libraries/FrameWorks: Numpy, Pandas, Matplotlib, Latex, sci-kit learn, Tensorflow, Pytorch, YOLO Models, Livekit
- Certifications: : Google Python Programming Certification, Stanford Supervised Machine Learning Certification

Projects

- **Custom AI Voice Assistant — Python, LiveKit, OpenAI** Built in Python with LiveKit and OpenAI, the assistant supports 10+ voice commands (queries, OS tasks, GitHub integration). Optimized modular design reduced latency by 40%, achieving sub-1 second response times. Includes 20+ functions and has logged 30+ hours of real use.
- **Quantitative Trading Toolkit (In Progress)** Creating a backtesting framework for 500+ equities over 10 years of data, generating 10+ performance reports (CAGR, Sharpe, drawdown). Prototyping Alpaca API integration for $100K+ simulated portfolios in live paper trading, and developing a companion website to visualize performance results interactively.

Leadership and Achievementsc

- **Winner – NASA Space Apps Challenge (Clemson Local Hackathon), Best Use of Data (2025)** (NASA Space Apps Challenge: Clemson) Led team ApertuRisers to develop SARMaps, an environmental monitoring platform leveraging Synthetic Aperture Radar (SAR) data to detect ecological damage and deliver real-time risk insights. October 2025