

Columbia, South Carolina

# 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**

**University of South Carolina**

**May 2025 – Present**

### **Machine Learning Research Assistant**

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**

- Developed a modular Python voice assistant using LiveKit + OpenAI
- Supports 10+ voice commands (queries, OS automation, GitHub integration, etc.)
- Achieved sub-1-second response latency via optimized architecture (40% reduction)
- Implemented 20+ functional modules with real-world usage of 30+ hours

### **Quantitative Trading Toolkit (In Progress)**

- Building a backtesting framework for 500+ equities over 10 years of historical data
- Producing 10+ performance analytics (CAGR, Sharpe, max drawdown, etc.)
- Prototyping Alpaca API integration for \$100K+ simulated portfolios in live paper trading
- Developing a companion frontend performance visualization dashboard

## Leadership and Achievements

- **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