Abhinav Yedla

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Education

University of Georgia — Athens, GA
Masters of Science in Computer Science (Double Dawgs Program) — *Expected May 2027*
Bachelor of Science in Computer Science — *Expected May 2026*
Cumulative GPA: **3.67** | Honors: Presidential Scholar (Summer 2025)
Relevant Coursework: Algorithms, Software Engineering, Operating Systems, Web Programming, Data Science, Statistics

Work Experience

VIPR AI/ML and Agricultural Robotics — Athens, GA
Undergraduate Research Assistant — *Jan 2026 – Present*

- Engineered automated **Python backend services** to ingest and validate **large-scale LiDAR datasets** (over thousands of frames), ensuring high-fidelity data quality for downstream machine learning tasks and operational readiness.
- Enhanced **autonomous robot navigation** by developing tree trunk perception logic, rigorously evaluating its performance against ground-truth data, and refining solutions through **cross-functional team reviews** to optimize ML model effectiveness.
- Established **repeatable and documented workflows** for data processing and analysis, implementing **standardized logging protocols** and comprehensive documentation to ensure team clarity and contribute to MLOps best practices.

Barberitos (On Campus) — Athens, GA
Student Worker — *Mar 2025 – May 2025*

- Managed **high-volume daily operations** serving over 100 patrons, effectively coordinating task delegation within a shift team and utilizing **fast-paced communication workflows** to maintain high service accuracy.
- Ensured **zero financial discrepancies** by accurately managing over $1,000 in daily transactions and upholding stringent **point-of-sale operations** to guarantee reliability and precision.

Projects

Data Processing and Predictive Analytics System | *Python, Docker, CI/CD*

- Automated **ETL pipelines** for large-scale datasets using **Python and Docker**, integrating CI/CD practices to significantly reduce manual data preprocessing time and enhance MLOps workflow efficiency.
- Optimized **predictive model accuracy** by rigorously evaluating various ML/NLP feature sets and selecting effective predictors through systematic **k-fold cross-validation**, directly impacting model performance.
- Implemented **data validation scripts** to automate anomaly detection and proactively identify data quality issues through Key Performance Indicator (KPI) checks, enhancing data integrity for ML models.

Movie Review Website | *React, RESTful APIs, Git*

- Developed a full-stack web application leveraging **React and RESTful APIs** to streamline dynamic UI updates and efficiently render user-submitted content, demonstrating foundational API development skills.
- Applied **software engineering fundamentals** including modular backend design and **Git version control** to enhance application maintainability and accelerate deployment speed, contributing to collaborative development workflows.

Survey Form Web Application | *React, UI/UX, Web Standards*

- Streamlined **data submission flows** by simplifying layout and grouping fields using **React components**, enhancing user experience and application usability.
- Improved **frontend design architecture** for enhanced accessibility and interface responsiveness, incorporating iterative user feedback to optimize the user experience of the web application.

File Comparison Tool | *C, C++, Memory Optimization*

- Engineered a high-performance byte-level utility in **C/C++** that decreased comparative analysis runtime for **large files (exceeding 1GB)** by optimizing execution efficiency.
- Increased **system reliability** and stability during repeated analytical runs by optimizing memory allocation and execution flow through the application of **advanced data structures** and algorithms.

Technical Skills

Languages: Python, Java, C/C++, C#, SQL, JavaScript, HTML/CSS, R
Frameworks/Libraries: React, Node.js, Next.js, Pandas, NumPy, Matplotlib
Tools & Platforms: Git (GitHub, GitLab), Docker, AWS, Linux/Unix, VS Code, npm, PyCharm, IntelliJ
Data & Perception: LiDAR (Velodyne VLP-16), Point Cloud Processing, PCAP File Processing, Spatial Analysis, Geometric Modeling
Concepts: Object-Oriented Programming, Agile, Data Analytics, Full-Stack Development, Backend & Frontend Engineering