Nikhil Sathisha

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EDUCATION

Georgia Institute of Technology **Atlanta, GA**
College of Computing | B.S. in Computer Science | Systems & Architecture, Intelligence May 2026
College of Engineering | B.S. in Electrical Engineering | Signal & Info Processing, Circuit Technology GPA: 3.73
Coursework: High Performance Computing, Algorithms, Automata & Complexity, Systems & Networks, Operating Systems, Robotics & Perception, Embedded Systems, Processor Design, Circuit Analysis, Machine Learning, Natural Language Processing

EXPERIENCE

Honeywell Aerospace, Norcross, GA - Software Engineering Intern **May 2025 - Aug 2025**
- Designed and Implemented software using Machine Learning and Control Systems for Counter UAS applications

Amazon, Seattle, WA - Software Development Engineering Intern **May 2024 - Aug 2024**
- Designed and implemented a chatbot for Amazon Prime Video's Resilience Portal for Operational Health.
- Used LangChain library to allow the Large Language model to query relevant context with Amazon Kendra vector search, and implemented citation of relevant context returned to the user.
- Developed a secure API with Amazon API Gateway, utilizing IAM authorization and resource policies.
- Created a custom user interface for the chatbot using React, AWS Cloudscape UI, and JavaScript, TypeScript, CSS.
- Deployed and integrated the chatbot API service through CI/CD pipelines.
- Wrote tests with 100% code coverage and used AWS CDK, successfully deploying infrastructure as code.

Dusty Robotics, Mountain View, CA - Engineering Intern **May 2023 - Aug 2023**
- Implemented signal processing algorithms in C++ to filter false magnetic sensor triggers from vibrations.
- Developed a Python script using the robot API to conduct endurance tests with load cell measurements.
- Automated testing of WiFi, LoRa, LTE antennas by parsing access point HTML signal data with BeautifulSoup, combined with automated movement using Telnet shell to collect live signal reliability data.
- Performed data analysis and visualization of RSSI and packet transmission data across multiple robots and antennas using pandas, Matplotlib.
- Developed a comprehensive testing methodology for signal reliability, and worked with RF consultant to identify optimal antenna placement, resulting in zero connection drops at distances of 60 to 90 meters.

PROJECTS & PAPERS

Marine Robotics Group, Georgia Tech **Oct 2024 - Present**
- Improved dynamic obstacle map implementation by fusing point cloud from stereo cameras and LIDAR. Designed algorithms for obstacle de-duplication and ML algorithms for classification on the point cloud.
- Designed and Built custom water-resistant drone with features, ensuring electronic, physical, and flight time requirements were met for RobotX competition.
- Configured a reliable heartbeat signal for inter-device communication, ensuring real-time system health monitoring.

Squatify: Pose Estimation and Form Scoring **Sept 2024**
- Developed a pose estimation model with OpenCV to analyze squat form, leveraging time dilation algorithms to score the similarity of user squats to a reference squat for form improvement and injury prevention.

Design-Operating Systems Projects **Jan 2024 - May 2024**
- Created optimizations on xv6, a Unix-like operating system by implementing copy-on-write forking of virtual memory pages for processes and zero-page allocation.
- Implemented threads with shared memory space in xv6, and created a two-level process scheduler with priority and preemption. Process and thread isolation was maintained.
- Implemented users and file permissions in xv6, with login, hashed & salted passwords, and chown/chmod.

Warehouse Automation Robot **Oct 2023**
- Developed particle filter localizer, using sensors to create rapid, accurate position estimates.
- Implemented an efficient path planner using the Rapidly-Exploring Random Trees (RRT) algorithm, enabling autonomous navigation to collect markers around obstacles in a simulated noisy environment.

TECHNICAL SKILLS

Languages: Java, Python, C, C++, JavaScript, Shellscript, Assembly, HTML, CSS, MATLAB, Swift, LaTeX, VHDL, Verilog
CAD: Onshape, OpenSCAD, Quartus, Autodesk Inventor, Autodesk Fusion 360, Revit, CircuitSim, Blender
Frameworks: Git, Kubernetes, Docker, Agile, React Native, MongoDB, Jira, Confluence, JUnit
Libraries: pandas, NumPy, Matplotlib, Keras, OpenCV, scikit, BeautifulSoup
Operating Systems: Linux (Fedora, RHEL, Ubuntu), Unix-like xv6, Windows, VisionOS