Rigved Koushik Doddi

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EDUCATION

Bachelor of Computer Engineering | North Carolina State University　　　　　　**August 2021 – May 2024**
- Coursework: Embedded Systems Architectures, Microarchitecture, Neural Networks, Microelectronics, Compiler Optimization and Scheduling, Application Programming in Java

Master of Computer Engineering | North Carolina State University　　　　　　**January 2025 – May 2026**

SKILLS

Programming Languages: Java, Python, C, C++, Verilog, MATLAB, JavaScript, SQL
Libraries: OpenCV, NumPy, Pandas, Keras, TensorFlow, sklearn, Matplotlib
Frameworks/Technologies: Docker, Git, Linux, Vivado, Simulink, React Native, Vue.js, Polariton, CAN, Vector

WORK EXPERIENCE

Automation Systems Engineer | Brock Solutions　　　　　　**June 2024 – Current**
- Designed and implemented HMI interfaces using Java and Python, improving operator control and monitoring capabilities, ultimately increasing production efficiency.
- Acted as the main contact for client service calls, troubleshooting HMI interfaces, scripts, and PLC ladder logic in real time. Leveraged strong communication skills to resolve issues promptly, ensuring client satisfaction.
- Developed Python scripts to automate discrepancy detection across 10,000+ project templates and streamline gateway web updates, enhancing project consistency, traceability, and efficiency during handovers.

Electrical Software Intern | Hyster-Yale　　　　　　**June 2023 – May 2024**
- Pioneered MATLAB scripts and Simulink models for SIL/MIL testing using testing methods like equivalence partitioning and boundary value analysis, significantly improving development time and efficiency.
- Tested different hardware components to ensure they met specifications. Designed and created test harnesses for truck controllers to interface with CAN and Vector software to generate device reports and monitor behavior under different conditions.
- Learned to automate unit tests using Jenkins, enhancing software reliability and deployment efficiency.

Full Stack Developer Intern | PlayMetrics　　　　　　**May 2022 – Aug 2022**
- Developed a user interface with Vue.js, JavaScript, HTML, and SQL for monitoring company success and user information.
- Created visually informative graphs and charts to streamline the client onboarding process.
- Integrated data from multiple APIs for over 500 clubs, enhancing data accuracy and usability for client onboarding and reporting. This data integration allowed for task prioritization, ensuring timely responses and high satisfaction across the customer base.

Research Assistant | North Carolina A&T State University　　　　　　**June 2021 – July 2021**
- Contributed to a $300,000 NCDOT-funded autonomous vehicle research project with applications in autonomous driving and fire rescue, focusing on safety and situational awareness in emergency response scenarios.
- Developed a small-scale prototype car using an Arduino Uno and an NVIDIA Jetson Nano, incorporating and testing multiple sensors, including a LiDAR sensor for object detection and avoidance.
- Designed and constructed a 3D exoskeleton and frame for the car using SolidWorks and 3D printers, enhancing the space for hardware components and improving aesthetics.

PROJECTS

Real-Time Object Detection and Tracking (Sponsored by Northrop Grumman): Designed and developed a smart camera system capable of identifying, tracking, and following individuals wearing face masks. Implemented object detection through a pre-compiled face mask detection model and used OpenCV's legacy MOSSE algorithm for facial recognition tracking. Created a C++/verilog module to convert coordinates into angles for precise movement and designed a proportional (P) controller for accurate camera positioning. Designed and assembled a circuit to interface with sensors and the control system. Researched and sourced components and thoroughly documented the development process for reports and presentations.

Apple Stock Prediction: Automated stock technical analysis through a neural network model in Python, focusing on predicting the future prices of Apple stocks and making stock investing easier without requiring extensive research. Using historical stock data, developed a baseline recurrent neural network with a simple RNN layer, achieving a root mean square error (RMSE) of 4.085. Enhanced accuracy by integrating long short-term memory (LSTM) layers, significantly improving the model's performance and reducing the RMSE to 1.962.