Rigved Koushik Doddi

336-995-4908 | rigveddoddi2002@gmail.com | linkedin.com/in/rkdoddi | github.com/RigvedKD

EDUCATION

Master of Computer Engineering | North Carolina State University **January 2025 – May 2026**
GPA: 3.50/4.0

Bachelor of Computer Engineering | North Carolina State University **August 2021 – May 2024**
GPA: 3.43/4.0

SKILLS

Programming Languages: Java, Python, C, C++, Verilog, MATLAB, JavaScript, SQL
Frameworks/Technologies: Docker, Git, Linux, Vivado, Simulink, React Native, Vue.js, Polariton, CAN, Vector

WORK EXPERIENCE

Embedded Systems Engineer | John Deere **June 2024 – Current**

- Enhanced the battery test environment by implementing code changes in C within a Hardware-in-the-Loop (HIL) setup, improving functionality, execution speed, and debugging efficiency.
- Improved time efficiency by 200% by implementing an autonomous CI/CD pipeline to deploy code across multiple testing environments, streamlining the development and testing process.
- Improved development boards to support testing of new hardware and updated validation requirements.

Automation Systems Engineer | Brock Solutions **June 2024 – January 2025**

- 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

Streamlined CNN Hardware Accelerator: Designed and implemented a streamlined CNN accelerator in SystemVerilog that reads a 1024x1024 image from DRAM, buffers it in SRAM, performs 4x4 convolution with LeakyReLU and 2x2 average pooling, and writes the results back to DRAM using burst transfers.

Real-Time Object Detection & Tracking (Sponsored by Northrop Grumman): Built a smart camera that detects, tracks, and follows people wearing face masks. Used a precompiled mask detector and OpenCV MOSSE tracking. Developed a C++ module to convert image coordinates to pan/tilt angles and implemented a P controller for camera alignment. Designed sensor/control interface circuitry and produced project documentation.

Simple CPU: Designed a 16-bit CPU using SystemVerilog, capable of performing various arithmetic operations such as addition, subtraction, multiplication, division, modulo, and exponentiation. Programmed an Arithmetic Logic Unit (ALU) with the necessary opcodes and developed a control unit, data path, and register file to facilitate these operations.