Rigved Koushik Doddi

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EDUCATION

Master & Bachelor of Computer Engineering | NC State University **Aug 2021 – May 2026**
GPA: 3.50/4.0

SKILLS

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

WORK EXPERIENCE

Embedded Systems Engineer | John Deere **Feb 2024 – Present**

- 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.
- Modified and upgraded PCB layouts for legacy development boards to enable seamless testing of next-generation hardware and ensure compliance with updated validation requirements.

Automation Systems Engineer | Brock Solutions **Jun 2024 – Jan 2025**

- Designed and implemented UI using Java and Python, improving operator control and monitoring capabilities, ultimately increasing production efficiency.
- Acted as the main contact for client service calls, troubleshooting UI 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 **Jun 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.
- Validated CAN-bus controllers and motor drivers against specifications. Engineered test harnesses for truck controllers to interface with CAN and Vector software to generate device reports and monitor behavior under different conditions.
- Automated unit testing pipelines using Jenkins, enhancing software reliability and deployment efficiency.

Full Stack Developer Intern | PlayMetrics **May 2022 – Aug 2022**

- Developed a full-stack dashboard using Vue.js, SQL, and HTML to track and visualize company success metrics and user data, improving data accessibility for stakeholders.
- Designed interactive and visually informative graphs to simplify complex datasets, significantly streamlining the client onboarding process.
- Integrated data from 500+ club APIs to enhance reporting accuracy, enabling task prioritization that ensured timely responses and high customer satisfaction.

Research Assistant | North Carolina A&T State University **Jun 2021 – Jul 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.
- Prototyped 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.
- 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 **Nov 2025 – Dec 2025**

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

Real-Time Object Detection & Tracking (Northrop Grumman) **Aug 2023 – May 2024**

- Built a smart camera that detects, tracks, and follows people wearing face masks using a precompiled mask detector and OpenCV MOSSE tracking. Developed a C++ module with a P controller to convert image coordinates to pan/tilt angles and designed circuitry for camera alignment.

Simple CPU **Apr 2023 – May 2023**

- Designed a 16-bit CPU in SystemVerilog capable of performing arithmetic operations like multiplication, division, modulo, and exponentiation. Programmed an ALU with custom opcodes and developed the control unit, data path, and register file to facilitate operations.