NIKITA VASILYEV

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EDUCATION

University of Illinois at Urbana-Champaign

Bachelor *of Science in Computer Engineering, Minor in Mathematics* May 2025, GPA: 3.74/4.00

Master *of Science in Electrical and Computer Engineering* Graduation May 2027

Related Coursework:

Embedded Systems Computer Systems Engineering Operating Systems Design
Digital Image and Video Processing Digital Systems Laboratory Artificial Intelligence

TECHNICAL SKILLS

Programming Languages: C, C++, Javascript, Java, HTML/CSS, Python, Assembly, Shell Scripting, SystemVerilog
Frameworks/Tools: Git, Linux, Ubuntu, Debian, GDB, MATLAB, Simulink, Soldering, Visio, Vivado, Universal Verification Methodology (UVM), QuestaSim, Wireshark, Kali, VirtualBox, SSH, Zephyr OS, Unified Diagnostic Services (UDS)

WORK EXPERIENCE

Rivian Champaign, IL

ADAS Hardware System Validation Intern May 2025 – August 2025

- Implemented Zephyr OS commands to validate IO expanders, GNSS modules, and CAN-FD device communication.
- Integrated Zephyr operating system commands into device IDs and test routines using the Unified Diagnostic Services (UDS) framework to streamline test execution.
- Created reproducible test cases for firmware/hardware teams, improving the handoff during post-validation.

Northrop Grumman Corporation Baltimore, MD

Digital Verification Intern May 2024 – August 2024

- Spearheaded the development of digital core RTL verification using object-oriented Universal Verification Methodology (UVM).
- Designed and implemented UVM framework components, including Transaction, Sequencer, Driver, and Monitor.
- Crafted testbench stimuli and rigorously validated RTL designs with QuestaSim, ensuring robust performance.
- Authored comprehensive backend workflow documentation for digital design using Cadence Innovus.

Motorola Solutions Schaumburg, IL

Embedded Software Intern May 2023 – August 2023

- Engineered an ARM64-based embedded system to transmit Wi-Fi (IEEE802.11a/g) packets using C and Shell scripting.
- Influenced system-wide architectural decisions, managing hardware integration and refining hardware selection.
- Built a data logging system with storage management in a Debian environment for reliable performance monitoring.
- Interfaced with I2C and SMBUS devices for efficient data acquisition and communication with hardware registers.

PROJECT HIGHLIGHTS

391OS Operating System (C/x86 Assembly) March 2024 – May 2024

- Orchestrated the creation of a Unix-based operating system written in C and x86 Assembly within 8 weeks.
- Directed a team of three peers, delegating tasks and delivering the project ahead of the semester deadline.
- Implemented core features, including General Descriptor Table (GDT), Interrupt Descriptor Table (IDT), virtual memory paging, task scheduling, and device drivers for keyboard, RTC, PIT, and terminal.

Network Occupation Detector (Python) April 2024 – May 2024

- Developed an IoT device to detect room occupancy by analyzing wireless network data.
- Automated packet collection using Python and Wireshark, targeting MAC addresses and Rx power levels.
- Enhanced data accuracy with an optimized K-Means algorithm to process and analyze room occupancy trends.

FPGA Fire Boy and Water Girl (SystemVerilog/C) May 2021 – August 2021

- Recreated the two-player puzzle game Fire Boy and Water Girl on an FPGA platform for hardware acceleration.
- Designed video memory architecture for efficient rendering and programmed game logic with a microcontroller.