

HOANG NGUYEN

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US Citizen | English and Vietnamese
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EDUCATION

Kennesaw State University - Honors Student

Bachelor of Science in Computer Engineering - Minor in Mathematics (4.0 GPA)

Marietta, GA

Expected graduation: May 2027

OBJECTIVE

Junior Computer Engineering student focused on Digital Logic Design and FPGA Development. Seeking a Hardware Engineering internship to contribute to verification and circuit design teams.

PROJECTS

- **FPGA UART Receiver - Display Controller (Verilog, Artix-7):**

- Designed a robust UART receiver module in Verilog on a Basys 3 FPGA, implementing a Finite State Machine (FSM) to handle asynchronous serial data at 9600 baud.
- Engineered a clock divider circuit to downsample the 100MHz system clock, ensuring precise sampling intervals for bit synchronization.
- Verified logic functionality through behavioral simulation in Vivado and hardware validation using a logic analyzer.

- **Digital Logic Design & Simulation:** Designed and validated a complex, multi-state traffic light control system

- incorporating timer-based logic for vehicle flow, pedestrian crossings, and train detection. Utilized the Hneemann Digital Logic Simulator to create schematics, perform functional simulations, and verify the correctness of the custom logic circuits.

EXPERIENCE

Undergraduate Research Assistant

01/2026 - Present

Kennesaw State University

Kennesaw, GA

- Conducting computational fluid dynamics (CFD) simulations using COMSOL Multiphysics to design microfluidic biomedical devices.
- Modeling non-Newtonian hemodynamic behaviors to analyze cell deformation in Sickle Cell Disease monitoring applications.
- Optimizing magnetic particle tracing and electromagnetic induction models to enhance sensitivity for viral infection biosensors.

Supplemental Instruction leader

05/2025 - Present

Kennesaw State University

Kennesaw, GA

- Facilitating bi-weekly study sessions for 100+ calculus students, raising average exam scores by 15% through peer-led instruction
- Collaborating with faculty to align lesson plans with course objectives and track student performance metrics.

Low Voltage Designer Internship

08/2025 - 12/2025

Jordan & Skala Engineers

Norcross, GA

- Analyzed electrical low-voltage schematics and telecommunication riser diagrams to ensure compliance with NEC standards and signal integrity requirements.
- Performed load calculations and validated technical submittals for commercial building systems, reducing design errors in power distribution layouts.
- Collaborated with cross-functional engineering teams to coordinate cable pathways and equipment clearances for multi-family and commercial projects.

SKILLS

Hardware Description: Verilog, VHDL, SystemVerilog.

EDA Tools: Xilinx Vivado, ModelSim, LTSPICE, MATLAB, Altium.

Hardware: Xilinx Artix-7 FPGA, Digital Logic Gates, PCB Layout basics.

Lab Equipment: Digital Oscilloscope, Logic Analyzer, Function Generator.

Others: C, C++, Python, Soldering and wiring.