

Yafet A Hailu

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EDUCATION

Northwestern University | Evanston, IL

BS in **Computer Engineering** and Minor in Machine Learning and Data Science

Graduation Date: June 2026

Relevant Courses: Computer Architecture, Operating Systems, VLSI Circuit Design, Microprocessor System Design, Computer System Software, Advanced Digital Design and Verification, Data Structures and Algorithms

TECHNICAL SKILLS

Software: C, C++, Python, Verilog, Arduino, Linux/Ubuntu, Assembly (ARM, x86, RISC-V), VMware, GitHub, MATLAB,

Hardware: CPU Design, Digital Circuit Design, Microcontroller programming, RTOS, Device Drivers, SPI, I2C, Embedded Systems Design, Cadence, RTL Synthesis, ARM Architecture, Oscilloscope, Simulation, Soldering

RESEARCH AND INTERNSHIP EXPERIENCES

Northwestern Robotics | Evanston, IL

Embedded Software Engineer

April 2024 – Present

- Designing a robot goalkeeper for the Northwestern women's lacrosse team to enhance practice sessions
- Leveraging the PyRoboteq library and data from real-time ball tracking to program the motor controller

Ethiopian Space Science Institute | Ababa, Ethiopia

Machine Learning & Computer Engineering Intern

June 2024 – Sep 2024

- Developed a predictive model using Recurrent Neural Networks and Long Short-Term Memory networks to forecast the Total Electron Count of the upper atmosphere by analyzing live satellite data
- Installed and configured device drivers for monitoring the primary satellite at the Space Science Observatory
- Oversaw and maintained the institute's main server throughout the internship, ensuring stability and performance

Meta | Menlo Park, CA

Above & Beyond Computer Science (ABCS) program fellow

Jan 2024 – Feb 2024

- Selected as one of 100+ global participants for Meta's intensive 5-week software development program
- Engineered solutions for complex algorithmic problems while receiving direct mentorship from Meta engineers

The Haile Lab Group | Evanston, IL

Python Developer

Sep 2023 – Mar 2024

- Reprogrammed the Materials Engineering lab's data management and control system from LabVIEW to Python
- Applied 11+ hours weekly to leverage Anaconda to optimize data handling and enhance system performance

Shirley Ryan Ability lab | Chicago, IL

Design Engineer

Oct 2023 – Dec 2023

- Prototyped a smart weight scale with wireless display and a vibration feedback mechanism to assist patients with lower extremity injuries during physiotherapy sessions
- Integrated weight-bearing calculation functionality to provide real-time data for rehabilitation tracking

SELECTED PROJECTS

Pipelined RISC-V CPU

August 2024 - Present

- Built a fully integrated 5 stage RISC-V pipelined CPU using Verilog and RISC-V Assembly
- Applied principles of RISC architecture to implement a 32-bit execution unit and synthesized the processor using cadence genus to run 800 MHz with a chip size of 28800 μm^2

TOM & JERRY: CLOUD CHASE game

Jan 2024 – Mar 2024

- Wrote 2000+ lines of code in ARM assembly to design an interactive tom and jerry chasing game
- Presented demo to 80+ people at Northwestern University

LEADERSHIP EXPERIENCE

Computer Engineering 203 | Peer Mentor

Evanston, IL | September 2024 - Present

- Covered Computer Engineering topics including logic circuit design, Assembly language, FSMs and ALU design
- Held weekly office hours, dedicating 6+ hours weekly to address student questions and provide guidance

Emerging Coders | Professional Liaison

Evanston, IL | February 2023 – Present

- Established partnerships with Google, Adobe and Duolingo to organize collaborative events and industry roundtables
- Raised \$2,500 in sponsorships to support club initiatives and provide resources for our First Generation & Low-Income members