

Moussa Hamzi

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QUALIFICATIONS

- Semiconductor Fabrication
- 2.5D Heterogenous Integration
- Computer Architecture, Computer Systems Design
- Strong Interpersonal and Communication Skills, Adaptability, and Teamwork and Collaboration

EDUCATION

Bachelor of Electrical Engineering, *University of Dayton, School of Engr.*, Dayton, OH 05/2026

- Relevant Courses: PCB Design and Manufacturing, Computer Systems Engineering, Electronic Devices, Intro to Semiconductor Manufacturing, Discrete Signals and Systems, Data Analytics Fundamentals

CERTIFICATIONS

PCEA PCB CPCD Certification In Progress
Altium Education PCB Design Course 04/2026
Intel Oasis Rapid Certification 05/2025

RESEARCH EXPERIENCE

Memristor Crossbar Application – *University of Dayton*, Dayton, OH 10/2025 – Present

- Construction of a 4x4 Memristor Crossbar using Known Memristors through breadboarding
- Collecting measurement data and comparing performance, efficiency, with SPICE simulations
- Includes digital to analog conversion, analog to digital conversion, current limiting, uses capacitance as weights
- Crossbar completes mathematical operations in analog and stores data digitally
- Different mathematical operations will be performed using the crossbar to compare data

Silicon 2.5D Packaging Research – *University of Dayton*, Dayton, OH 10/2025 – 05/2026

- Packaged silicon dies using Nano Dimension Dragonfly IV PCB 3D Printer
- Created base dielectric layer in which die was glued down onto
- Dielectric with vias and silver nanoparticle ink traces were printed, with traces fanning out to test pads

AI Band-gap Energy Prediction – *University of Dayton*, Dayton, OH 09/2024 – 12/2024

- Predicted Band-gap Energy of TMDC's by converting euclidean coordinates to canonical coordinates using Python
- Used AI algorithms SVR and SVC, with a mean squared error (MSE) of 0.00695 and R-squared value of 0.974

PROJECT

Upgradeable Smartphone – *Vandalia*, OH 06/2024 – Present

- Invented and developed an upgradeable smartphone using available electronics
- Uses upgradeable module containing APU, ram, and storage. Unique PCB being designed to create a final product.

Vision Walker System – *University of Dayton*, Dayton, OH 10/2025 – 05/2026

- Led senior design team in building a real-time assistive navigation system for blind and deaf individuals
- Built on Jetson Orin Nano, uses stereo cameras and a time-of-flight sensor for 3D spatial awareness

EXPERIENCE

Student Worker – *School of Engr., Lab Management Office*, UD, Dayton, OH 05/2024 – Present

- Support lab management team in daily needs, using technological and non-technological solutions
- Created student training records management and sign in app for University's Makerspace
- Troubleshooted oscilloscopes, power supplies, multimeters, and function generators
- Trained over 50 high school students in soldering during single day events

WORK HISTORY

Food Packer/Runner – *Ozu852*, Englewood, OH 05/2023 – 05/2024

- Assisted restaurant owners with different technological needs, improved communication skills