Will Buziak

willbuziak@gmail.com — will_buziak@mines.edu

Background

Computer Science Master's student with a background in Mechanical Engineering, seeking to convert a wide array of interests into impactful innovations.

Research Interests

Microarchitecture Design, Multi-Physics Modeling, Heterogeneous Computing, Edge Computing, High Performance Computing, Signal Processing, Low-power Energy Alternatives

Education

Masters of Science
Field of Study: Computer Science
Colorado School of Mines
Expected Graduation: Spring 2026

Bachelor of Science
Major: Mechanical Engineering
Minor: Computer Science
University of Tennessee, Knoxville
Graduated: May 2024

Experience

Bahar Lab
Graduate Research Assistant — Aug 2024 - Present

- Secure Memory Computer Architecture Design for RISC-V Trusted Execution Environments
- Simulation Verification and Modification using the Gem5 simulator

References: Dr. Iris Bahar (Mines), Dr. Tamara Silbergleit Lehman (UCB)

Neuromorphic Computing TENNLab
Undergraduate Research Assistant — Dec 2022 - Aug 2024

- Mathematical modeling on a joint project with ORNL Research Scientists utilizing a neuromorphic controller on a dual fuel diesel-ammonia combustion engine
- Robotic design for swarming robotic applications emphasizing onboard low-power electronics
- Event-based camera data processing for object recognition utilizing speed filtering and clustering algorithms within the TENNLab framework

References: Dr. James Plank (UTK), Dr. Catherine Schuman (UTK), Dr. Charles Rizzo (UTK), Dr. Bryan Maldonado (ORNL), Dr. Brian Kaul (ORNL)

Electrochemical Energy Conversion and Storage Lab
Undergraduate Research Assistant — Aug 2022 - May 2024

- Multi-physics modeling for hydrogen electrolyzer research applications
- Designed a web-based interactive user interface for the visualization of Electric Vertical Take-Off and Landing (eVTOL) vehicle energy storage and power delivery system requirements

References: Dr. Matthew Mench (UTK), Dr. Douglas Aaron (UTK), Dr. Anirban Roy (NREL)

Eck-Lectric Industries
Mechanical Engineering Intern — Oct 2022 - Dec 2022

- Assisted in original product design for patent development

References: Fred Martin, Paul Eck

Shaw Industries
Process Engineering Co-op — May 2022 – Aug 2022

- Led process improvement projects in a manufacturing environment with a focus on waste optimization, automation and safety

References: Ashley Muench

IEEE / ACM Invited Talks

- YARCH '25 Workshop hosted by ASPLOS-EUROSYS 2025
- IEEE Denver Computer, Information Theory, and Robotics (CIR)

Awards

- EnergyTech University Prize 2023 Bonus Prize finalist

Computer Skills

- **Programming:** C/C++, Rust, Python, Java, HTML/CSS, MATLAB, RISC-V
- **Design Software**: Verilog / SystemVerilog, Solidworks, Onshape
- **Operating Systems:** Linux/Unix, Windows Suite
- **Version Control:** git (Github / Bitbucket / Gitlab)
- **Single Board Computers:** Raspberry Pi 4/5, Raspberry Pi Pico, Arduino
- **Architecture Simulators:** Gem5, QEMU
- **Software Design Kits:** Qiskit

Technical Skills

- **Simulation:** Mathematical & Multi-physics Modeling, Simulators and Emulation Frameworks
- **Quantum Computing:** Quantum Programming & Theoretical Quantum Computation
- **Fabrication:** Woodworking, Metal-Working, Additive Manufacturing, Soldering
- **Textiles:** Crocheting

Contact

- Email: willbuziak@gmail.com
- Phone: (808) 342-0160
- Github: github.com/wbuz24
- Personal Website: https://wbuz24.github.io/wbuz24/