Jacob Torry

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Education

University of Illinois Urbana-Champaign, BS in Computer Engineering — Aug 2022 – May 2027

- GPA: 3.26/4.0
- Minor in Semiconductor Engineering
- **Advanced Coursework:** Signal Processing, Computer Systems, Digital Systems Lab, Semiconductor Electronics, AI, Data Structures, Computer Organization and Design

Work Experience

Intern, SCADAware – Normal, IL — Jun 2025 – Aug 2025

- Delivered automation projects including robotic systems for Caterpillar, Urbana Sanitation District panel upgrades, and a motor starter panel for Steltec Wastewater Systems.
- Produced control panel layouts and wiring drawings in AutoCAD, ensuring accurate assembly and compliance with specifications.
- Collaborated with engineers, vendors, and customers to translate requirements into industrial control solutions.

Consumer Electronics Advisor, Best Buy – Bloomington, IL — Oct 2021 – Aug 2022

- Served as a sales advisor in the computing department, leveraging technical knowledge to guide customers in selecting laptops, desktops, and peripherals tailored to their needs.
- Consistently exceeded sales goals for computing products by providing clear, customer-focused product explanations and value-based recommendations.
- Collaborated with Geek Squad and inventory teams to ensure a seamless customer experience from purchase to setup.

Projects

Pacman Remake — Pacman (GitHub)

- Built a fully functional Pacman game on the RealDigital Urbana FPGA using SystemVerilog and C, collaborating with a partner on design and implementation.
- Integrated USB-SPI protocols and AXI bus for keyboard input; programmed game logic and pseudo-AI for ghosts in C (Vitis).
- Optimized BRAM/ROM usage by managing sprite and map data storage on-board.

ECE 411: Computer Organization and Design - University of Illinois (In Progress)

- Implementing a pipelined RISC-V CPU in Verilog/SystemVerilog with hazard detection, forwarding, and branch handling.
- Designing and verifying the CPU using simulation and testbenches against the Spike ISA reference model.
- Upcoming course projects include adding a cache subsystem and extending the design to an out-of-order execution CPU, applying real-world computer architecture techniques.

Illinix- Basic Unix Operating system

- Developed and debugged a Unix-like operating system in RISC-V and C as part of a 3-person team.
- Implemented a file system enabling the Virtual I/O block device to open, close, read, and write files.
- Created test cases and used GDB to debug and validate memory operations, collaborating with teammates to ensure reliability.

Technologies

Languages: C, C++, Java, Python, JavaScript/TypeScript, SQL, SystemVerilog, RISC-V
Tools/Frameworks: Next.js, Neon Postgres, GitHub, VS Code, Eclipse (Vitis), Linux , PyCharm, Synopsys
Hardware: FPGA (Urbana Board, Vivado/Vitis), Raspberry Pi
Other: AutoCAD, DraftSight, Microsoft Excel, SharePoint