

John Jacobson

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Education

University of Illinois Urbana-Champaign, *B.S. Engineering, EE track* *Aug 2025 – May 2029*
◦ **Coursework:** ECE 220 Computer Systems & Programming, ECE 120 Intro to Computing, ECE 110 Intro to Electronics, Electromagnetism, Differential Equations, Discrete Mathematics

Projects

Aviation Weather Display, *C++, ESP-IDF, LVGL, ESP32-P4, REST APIs* *Jun 2026 – Present*
◦ Building an embedded weather terminal on a Waveshare ESP32-P4 that displays live METAR field conditions and VFR/IFR flight categories at a glance for pilots, sourced from the aviationweather.gov API
◦ Writing the firmware in C++ on the ESP-IDF toolchain, designing the data model that moves parsed reports from the network layer to the display, and learning LVGL to build the interface

Vending Machine FSM Controller, *ECE 120, Xilinx Vivado, TTL* *Feb 2026 – Mar 2026*
◦ Designed an eight-state FSM for a vending machine controller restricted to NAND/NOR/NOT gates, deriving logic with K-maps and verifying the design in Xilinx Vivado with a SystemVerilog testbench
◦ Implemented the controller on a breadboard with TTL logic ICs, wiring an asynchronous reset and debugging with LEDs until it drove a physical vending machine prototype over a ribbon cable interface

Personal Portfolio Site, *Astro, HTML/CSS, Git, Cloudflare Pages* *Jun 2026 – Present*
◦ Building a personal site in Astro that presents my engineering projects and flight training
◦ Deploying through Cloudflare Pages with automatic rebuilds on every push to the GitHub repository

Experience

Key Holder, *GNC*, Winston-Salem, NC *Jun 2026 – Aug 2026*
◦ Ran the store independently, handling opening/closing, register operation, and daily cash reconciliation
◦ Drove membership and loyalty program sales while advising customers across the store's full supplement line, and processed incoming shipments against packing lists to maintain the sales floor

Grocery Stocker, *Publix Super Markets*, Winston-Salem, NC *Nov 2024 – Jun 2025*
◦ Restocked and merchandised inventory across multiple departments in a fast-paced, high-volume store

Leadership & Involvement

Phi Gamma Delta, *Rush Chair* *Sep 2025 – Present*
◦ Lead chapter recruitment, organizing rush events and coordinating outreach to prospective members

IEEE Student Chapter & SIGARCH, *Member* *2025 – Present*
◦ Attend hands-on workshops in soldering, circuit design, and ASIC design, plus technical talks on logic gates, pipelining, and cache design

Achievements

Eagle Scout, *Scouting America* *Dec 2024*
◦ Designed and led a service project building planter benches for the Forsyth County Humane Society, managing budget and materials sourcing for a team of over 30 volunteers
◦ Served as Troop Senior Patrol Leader, planning events and mentoring younger scouts

FAA Private Pilot Certificate, *Airplane Single-Engine Land* *In Progress*
◦ Logged over 70 hours in Cessna 172s, including solo cross-country and night flights
◦ Operating under FAA procedures and ATC radio communication while managing checklists and navigation

Technical Skills

Languages: C, C++, Python, Java, LC-3 Assembly, HTML/CSS
Tools: Git, Linux, ESP-IDF, CMake, LVGL, Vivado, Neovim, VS Code
Design & CAD: Onshape, Fusion 360, Blender