

# Jack Drabenstadt

<http://jackdrab.dev>

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## EDUCATION

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- **University of Pittsburgh** Pittsburgh, PA  
*B.S. Computer Science; B.S. Digital Narrative & Interactive Design; Minor Information Science Expected Spring 2026*

## EXPERIENCE

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- **University of Pittsburgh** Pittsburgh, PA  
*Undergraduate Research Assistant* *December 2024 - August 2025*
  - **Dynamic Reconfiguration System:** Designed and implemented YAML-based runtime configuration system for Spire distributed system. Built parsing, network transmission, and application components to enable live configuration updates, replacing static compiled constants with dynamic reconfiguration capabilities.
  - **Distributed Systems Development:** Developed C code for intrusion-tolerant Byzantine fault-tolerant systems. Collaborated with research team on implementation, testing protocols, and system security enhancements.
- **University of Pittsburgh** Pittsburgh, PA  
*Student Technical Consultant* *February 2024 - December 2024*
  - **Technical Support:** Diagnosed and resolved hardware, software, and networking issues across all major operating systems (Windows, macOS, Linux, iOS, Android). Provided malware removal, OS repair, and system troubleshooting with limited supervision.
  - **Network Configuration:** Configured wired and wireless connectivity to university networks. Utilized command line tools for system diagnostics and troubleshooting. Documented complex technical issues in knowledge base to improve team efficiency.

## PROJECTS

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- **Pittsburgh Food Access Map — Capstone Project:** Sole developer for full-stack web application mapping food resources across Pittsburgh for Pittsburgh Policy Initiative. Built interactive React frontend with Leaflet map integration, filtering by resource type and neighborhood. Designed and implemented responsive interface for web and mobile. Developed Flask REST API backend with SQLite database. Created admin dashboard for content management and user reporting system. Cleaned and validated large-scale datasets for deployment.
- **Home Server Infrastructure:** Designed and maintained self-hosted server with 50TB RAID storage running containerized services for personal media management, game servers, and file management. Migrated all applications to Docker for improved organization and scalability. Configured reverse proxies, DNS management, and security hardening (firewall rules, intrusion prevention). Implemented automated backup system for configuration files. Reduced power consumption 50% through hardware optimization while serving multiple users.
- **DIY Multi-Room Audio System:** Built synchronized whole-home audio streaming system using Snapcast and Docker containerization. Designed and 3D-printed custom enclosures. Integrated Librespot for Spotify Connect functionality across entire home network.

## TECHNICAL SKILLS

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- **Languages:** C, C#, Python, Java, JavaScript, HTML/CSS, YAML
- **Web Development:** React, Flask, Node.js, SQLite, REST APIs, Leaflet
- **Systems & Tools:** Git, Docker, Linux, Bash, networking, reverse proxies, DNS, RAID
- **Other:** UI/UX design, system administration, containerization

## RELEVANT COURSEWORK

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- Programming Languages for Web Applications, Software Quality Assurance, Algorithms & Data Structures, Introduction to Systems Software, Computer Organization & Assembly Language