JACK L. WALSH

+1 (415) 596-7814 ⋄ jacklouiswalsh@gmail.com
Chicago, Illinois
jackwalsh.xyz

EXPERIENCE

Intellihot Inc. November 2023 – Present
Embedded Software Engineer *Vernon Hills, IL*

- Carrying out control software algorithm development activities related to tankless water heaters, boilers, and similar devices in the HVAC field.
- Working with control and design engineers to create, develop, and test state machines and control logic.
- Developing, implementing, and testing software communication schemes between control systems and Internet of things (IoT) devices.
- Documenting test results and creating standard debug procedures.
- Built a fully-functional Azure web server running Python, incorporating REST APIs, handling data calls from tens of thousands of connected IoT devices in real time

Intellihot Inc. July 2022 – November 2023
Mechanical Systems Engineer *Vernon Hills, IL*

- Provided system-level technical support to the customer service team, dealer/contractor network personnel, and customers in order to troubleshoot and resolve product performance issues with their water heaters.
- Analyzed field issues and recommended changes to the engineering team to improve product quality and resolve various ongoing problems with manuals, troubleshooting guides, or startup procedures.
- Developed training documents, technical reports, and root-cause analysis guides using Ishikawa diagrams to present to senior management.

Sleep, Stress, and Memory Lab June 2021 – August 2021
Research Assistant *Notre Dame, IN (virtual)*

- Worked under Dr. Dan Denis, assisting with the lab's research on the effects of sleep spindles in a patient's brainwaves on the patient's memory consolidation.
- Analyzed large quantities of subjects' electroencephalograph (EEG) data using MATLAB, identifying sleep spindles using digital signal processing.
- Compared the spindles' density, amplitude, duration, and frequency for different subjects.

PROJECTS

Senior Design Project October 2021 – May 2022
Pipe Freeze Detection

- Designed a device to be inserted into dorm radiators and warn students if theirs is close to freezing.
- Used an ESP8266 chip with Wi-Fi functionality and a temperature sensor to determine when an alert needed to be sent.
- Built a Python web server to receive signals from the devices using the MQTT protocol, and sent students alerts via email and SMS.
- Wrote a team website using HTML and CSS to document our progress.

EDUCATION

University of Notre Dame *Notre Dame, IN*
B.S. in Electrical Engineering
Minor in Engineering Corporate Practice

TECHNICAL STRENGTHS

Computer Languages	Python, JavaScript, HTML, CSS, C, C++, MATLAB, Java, Assembly, PowerShell, Unix Bash, Windows CLI
Environments	Unix, Linux, Windows NT, macOS, Raspberry Pi, Arduino
Tools	Azure, LaTeX, Adobe Creative Suite, Microsoft Office, LibreOffice, KiCad
Protocols & Formats	SSH, FTP, UPnP, MQTT, TCP, UDP, HTTP, VNC, XML, JSON
Languages	English (native), Spanish (proficient)
Certifications	Amateur Radio License (*Technician class*, KN6NFA)