Gyda Nawarungruang

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EDUCATION

Northwestern University, Evanston, IL — September 2021 – June 2025
B.S. in Electrical Engineering, M.S. in Computer Engineering — GPA: **3.91 / 4.00**

EXPERIENCE

Boston Scientific, Arden Hills, MN — September 2025 – Present
R&D Systems Evaluation Engineer

- Develop system-level verification and characterization methods for implantable cardiac devices, evaluating cross-feature interactions across device states, software/firmware releases, and physiological-use conditions
- Built a repeatable data collection pipeline for hardware root cause analysis, integrating implant hardware, telemetry systems, firmware configuration, and signal analysis
- Designed and executed hardware experiments to isolate PCB- and IC-level contributors to sensor artifacts, informing firmware and hardware design decisions
- Serve as feature SME for protocol reviews, failure investigations, and regression automation using Python and Perl in a regulated medical device environment

Boston Scientific, Arden Hills, MN — June 2024 – August 2024
R&D Hardware Design Intern

- Developed an assembly-based power diagnostic algorithm for a custom event-driven processor in a mixed-signal IC to monitor current consumption in implantable cardiac devices
- Designed hardware-triggered diagnostic routines and SRAM-based logging for current measurements and timestamps
- Verified digital behavior in Xcelium using SystemVerilog and translated simulation results to system-board hardware testing
- Characterized device current across pacing amplitudes and impedance loads using JTAG, PicoScope, LabVIEW, and Python

PA Consulting, Concord, MA — June 2023 – August 2023
Electrical Engineering Intern

- Wrote SPI drivers in C for an environmental sensing embedded system with SD card and configured API for e-paper display
- Built C-based UI to collect and display temperature, humidity, pressure trends over 48 hours with interrupt-based user config
- Designed PCB for handheld controller in Altium, including schematic capture, layout, custom footprints, and routing within mechanical and industrial design constraints
- Performed hardware DOEs, PCB rework, and alternative board design exploration to improve capacitive sensing performance in a battery-powered device

PROJECTS

Botani-Flow, Evanston, IL — April 2024 – June 2024

- Developed an ESP32-based IoT plant care system with environmental sensing, automated watering, web control, OLED display, and plant API integration
- Designed actuator control circuit using MOSFETs, LiPo supply, and buck converter to drive water pumps and solenoid valves
- Performed hardware debugging and root-cause analysis to resolve MOSFET drive issues and restore system functionality
- Built a web interface for live sensor monitoring, configurable watering schedules, and plant-specific recommendations

SeniorSafe, Evanston, IL — April 2024 – June 2024

- Built a wearable for senior care integrating biometric sensing, fall detection, haptic feedback, and Wi-Fi emergency alerts
- Implemented heart-rate monitoring and accelerometer-based fall detection using I2C sensors, FIR filtering, and threshold-based event detection
- Designed PCB and 3D-printed enclosure for a compact wearable prototype, integrating sensor and user interface hardware

Webcam System, Evanston, IL — January 2024 – March 2024

- Built an end-to-end embedded Wi-Fi webcam with a custom PCB, C firmware, web interface, and 3D-printed enclosure
- Debugged hardware/firmware integration using logic analyzer traces, UART logs, and Microchip Studio to validate SPI image transfer and camera communication
- Designed a 2-layer PCB in EAGLE, including schematic capture, component placement, and manual routing

SKILLS

- **Hardware/Test**: System verification, failure analysis, sensor characterization, PCB schematic/layout, Altium, EAGLE, oscilloscopes, logic analyzers, DMMs, power supplies, soldering/rework, test fixtures/prototypes
- **Software/Embedded**: C/C++, Python, MATLAB, Perl, SystemVerilog, Verilog/VHDL, Linux, embedded systems, SPI, I2C, UART, GPIO, STM32, Arduino, Xcelium, LTspice
- **Engineering Practices**: Design verification, requirements tracing, regulated documentation, protocol development, root-cause analysis, data analysis, cross-functional technical communication