

DUY (SIMON) PHAM

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U.S. Citizen | Eligible for DoD Security Clearance

EDUCATION

University of Massachusetts Boston, College of Science & Mathematics

Graduation: Dec 2027

B.S. Electrical Engineering, Minor in Computer Science

- GPA: 3.60 / 4.00 | Dean's List: 2023–2026
- Relevant Coursework: Signals & Systems, Fields and Waves, Electronics I & II, Antenna Design, Digital Systems, Circuits I & II, Probability & Random Processes, Applied ODEs, Linear Algebra

TECHNICAL SKILLS

Programming & Software: Python, C, C++, MATLAB, LTspice, Linux, Bash, LaTeX, Solidworks, Verilog/VHDL, KiCAD

Circuit Design: Op-amps, Filters, Microwave Circuits, Sensors, BJTs, MOSFETs, PCB Design

Lab & Measurement: Oscilloscope, Function Generator, Multimeter, Spectrum Analyzer

Embedded Systems: Raspberry Pi, STM32, ESP32, Arduino, Nvidia Jetson

WORK EXPERIENCE

Electrical Engineering Intern

May 2026 – Aug 2026

RMF Engineering Inc.

- Assisted in the design of building electrical power systems, including distribution panels, lighting circuits, and branch circuits for project documentation
- Produced AutoCAD/Revit electrical drawings, including panel schedules and power distribution diagrams for construction drawing packages
- Performed electrical load calculations and voltage drop analysis for commercial building electrical systems during early design phases
- Collaborated with multidisciplinary engineering teams to coordinate electrical infrastructure with HVAC and architectural layouts

Undergraduate Research Assistant

Jan 2026 – May 2026

Ubiquitous Communication and Networking (UCaN) Lab – Distributed Spectrum Sensing Algorithm Models

- Deployed and Implemented a multi-node wireless network via Raspberry Pis, collecting RSSI and throughput measurements for ML Algorithm Training
- Automated data collection and controlled experimental parameters XMLRPC, ZMQ Python scripts, implementing on Raspberry Pi node networks
- Modified Distributed Spectrum Sensing Algorithm submodels, increasing consensus accuracy to ~95% and improving decision speed by ~20%
- Integrated Linux-based Testbed Controller (Ubuntu) to support Software Defined Radio spectrum sensing experiments and Raspberry Pi control
- Developed MATLAB probability density function models to characterize detection thresholds, reducing false detection rates in the DSS algorithm
- Wrote and Deployed Bash scripts for testbed controller to Raspberry Pi, to transfer Python scripts, CSV files, and to save collected experimental data

Firmware & Embedded Systems Engineer

Feb 2026 – May 2026

UMass Boston Robotics & Engineering Club – STM32 Drone Health Monitoring System

- Built and deployed in C a functional project prototype using Arduino, successfully integrating sample ML algorithm into PCB flight controller
- Ran 30+ motor health tests for Machine Learning Algorithm Training, using real time collected voltage, current, temperature, and RPM measurements
- Reduced false drone health alerts by 25%, maintaining 97% Drone Health Accuracy through algorithm training and tuning, validated with 300+ tests
- Deployed C code for STM32 microcontroller, to process ESC telemetry and monitor drone health in a local Python based UI with 10 ms updates

Incoming Undergraduate Teaching Assistant

June 2026 – Aug 2026

UMass Boston Signals & Systems and Probability & Random Processes Courses

- Selected to support students through office hours, homework review, exam preparation, and reinforcement across engineering coursework
- Will assist students with Fourier transforms, convolution, sampling theorem, and probability distributions through technical problem-solving support

PROJECTS

AM Radio Receiver & Transmitter

June 2025 – Nov 2025

- Implemented bandpass filter receiving 680 kHz, 850 kHz, and 1510 kHz radio waves, verifying real time audio from Boston radio stations
- Optimized RC filters lowering noise floor by ~15% and reducing noise by ~5 dB for clearer recovered speech, validated over 30+ test trials
- Designed and deployed a diode based envelope detector to rectify and demodulate AM audio signal from varying radio station carrier waves
- Designed, built, and tuned an LM386 audio amplifier stage with variable gain (5x–20x) for user controlled volume adjustment

Raspberry Pi Interactive Piano Learning System

Feb 2026 – May 2026

- Developed Python software for a Raspberry Pi-based piano learning system, translating user switch inputs into real-time multicolor LED feedback
- Built Python music libraries for preset songs, converting musical note sequences into binary LED display patterns with adjustable BPM playback
- Integrated and tested electrical hardware including breadboard, push buttons, LEDs, resistors, and Raspberry Pi GPIO connections
- Created MATLAB analysis scripts to measure user accuracy across multiple trials and track learning progression under varying control conditions

CONFERENCES

NEWSDR Boston 2026 — New England Workshop on Software Defined Radio

2026

MassRobotics Boston 2026 — Form & Function Robotics Challenge Competition

2026