

# Nathan Hunt

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## EDUCATION

### University of Massachusetts Amherst

Anticipated, 2027

Bachelor of Science in Computer Engineering

## RELEVANT COURSEWORK

Advanced Programming (Python), Advanced Programming (C++), Analytical Tools for ECE, Computational Tools for ECE, Circuits & Electronics I, General Physics I & II, Intro to Digital & Computer Systems, Intro to Electrical & Computer Engineering, Security Engineering, Systems Programming, Hardware Organization & Digital Design

## PROJECTS

### Wrote Drives for BNO055 IMU on Raspberry Pi Pico

- Researched BNO055 architecture/register map and operating modes
- **Converted raw sensor frames to SI units** and managed calibration/offsets
- Set up CMake/Pico SDK; **configured I<sup>2</sup>C/GPIO**; added diagnostics, power-modes, and error handling

### Created and Optimized a Text Editor

- Created and optimized a terminal text editor that reads raw keystrokes and maintains a live buffer
- Fast navigation and insert/delete via a linked-list core with O(1) cursor-adjacent edits
- Built a header/API and modular .c/.h structure with boundary checks and robust error handling.

### Built a linear regression model to predict house prices

- Implemented **custom MSE loss, analytic gradient, and weight updates**, and created visual plots.
- Trained and evaluated on separate data sets for training and test data.
- plotted learning curves to monitor convergence, and added error handling to keep long runs stable.

### Worked with visual processing in C++

- Built a matrix-driven rendering that generates a dynamic image in real time
- Controlled Image change with x and y bounds

### Photo Editing Software in Java

- Wrote an algorithm to traverse an image and edit based on parameters

## EXPERIENCE

### Power/Thermals Subteam Member – UMASS CubeSat Team

September 2025 - present

Team Member

- Writing firmware and developing a custom PCB for the **Battery and Power Distribution Systems**
- Coordinated with subsystem teams to assess power budgets and create the **satellite PDU**

### UNH Electric Vehicle Organisation

September 2023 - December 2023

Team Member

- Diagnosed and repaired EV subsystems independently
- Collaborated with a team to **convert gas vehicles to electric vehicles**
- Worked with motors, wiring, gearing; used 3D modeling/printing; programmed remote controls

## SKILLS

Programming: Python, C++, C, Java, JavaScript, ARMv8, HTML, CSS

Tools: KiCad, LTspice, Multisim, MATLAB, SolidWorks, AutoCAD, Excel, PowerPoint, Word

Hardware: PCB design, soldering; Arduino, Raspberry Pi, BeagleBone