Erika Chen Elston

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Summary

Driven EE junior with a history of strong academic performance and a commitment to learning & problem solving in any situation. Interested in exploring embedded systems, field service engineering, and semiconductor manufacturing.

Education

University of Massachusetts Amherst – BS in Electrical Engineering, **3.89 GPA** Expected 2026
Minor in Computer Science, Commonwealth Honors College Member

Coursework: Fundamentals of Semiconductor Devices, Signal Processing Methods, Programming & Test Methodology

Skills

Programming: C, JavaScript, TypeScript, Python
Hardware: ATmega328P (8-bit MCU), BeagleBone Black (32-bit MCU), Electronics Lab Equipment, Soldering
Tools: GitHub, LTspice, MATLAB, Microsoft Excel, PuTTY

Projects

Blue Jay Call Binary Classification | eelston.github.io/projects/bluejay Fall 2024
- Collaborated with classmate to train and test a machine learning algorithm in order to detect whether or not a blue jay call was present in an audio recording using spectrogram image representation
- Achieved 95% classification accuracy upon final model training with 400 audio signals

University Weather Data Application Spring 2024
- Led 2 peers in implementing a JavaScript application that collects weather data for universities based on user query using information fetched from web interfaces (APIs) providing university name, geographic location, and weather data
- Ensured each contributing asynchronous function consistently performed as desired through potential API issues, such as failed fetches or server errors, simulated using Jest framework mock testing
- Used GitHub version control to facilitate distribution of work and group code review before merging contributions

Digital Thermometer Spring 2024
- Implemented a digital thermometer that displays ambient temperature on both a small OLED display and a laptop display via emulated serial console, using the ATmega328P's ADC module and a TMP36 temperature sensor in C

KIM-1 LED Matrix Art | eelston.github.io/projects/pixelart Spring 2023
- Used assembly language programming to display pixel art patterns on Adafruit DotStar 8x8 LED grid with patterns selected through corresponding KIM-1 clone keyboard input
- Designed a Python automation script to convert custom patterns written as a sequence of colors into assembly language, reducing the time needed to write code and test the appearance of different hex color codes on the LED grid

Housing Price Prediction ML Algorithm Spring 2023
- Applied linear regression and gradient descent to implement a machine learning algorithm designed to estimate the price of a given house based on 25 property features using Pandas, NumPy, and Matplotlib Python libraries
- Evaluated prediction quality by observing learning curves and final mean square error (MSE) of training dataset in comparison with testing dataset predictions and MSE, lowered learning rate appropriately to eliminate overshoot

Experience

Peer Advisor, UMass Department of Electrical & Computer Engineering – Amherst, MA September 2024 – Present
- Hold weekly drop-in office hours for undergraduate students, answering questions regarding academic challenges, time management, and course scheduling
- Assist in planning community-building events within the ECE department and engage in student and faculty outreach

Secretary, Dean's Undergraduate Student Advisory Group, UMass College of Engineering September 2024 – Present
- Record meeting minutes and communicate with advisory group members on behalf of the chair and vice-chair
- Represent peers in electrical engineering in discussions with the Dean and faculty on subjects such as career fairs, course content, academic success, and student well-being and resources

Activities & Interests

UMass CubeSat (On-board Processing Team), Society of Women Engineers, Brazilian jiu-jitsu, crochet