Elias Kountouris

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Technical Skills

Languages	C++, C, Python, Javascript, Go, Rust, Bash, SQL, Java
Tools / Frameworks	PyTorch, Tensorflow, Numpy, React.js, Node.js, Django, Git
Technologies	KiCAD, VSCode, SPICE, SolidWorks, AutoCAD, AWS, Microsoft Azure, Arch Linux

Experience

Waterloo Rocketry - Electrical Team September 2021 - Present

- Designed and created sensor schematics, PCB, and firmware for rocket's CAN to collect data on rocket health during tests
- Wrote firmware for the boards, using with I^2C and SPI, to interacte with sensors and control the rocket in real-time
- Manufactured and debugged data acquisition system's power boards using reflow oven and oscilloscopes

Zappos - Software Developer June 2020 - September 2020

- Utilized PyTorch to create a sentiment analysis algorithm to analyze reviews of products and adjust on-site product recommendations accordingly. Improved site retention by 10%
- Implemented natural language processing with PyTorch to improve site search results by analyzing search queries for key topics

Feautred Projects

Keypad PCB and Firmware - C, KiCAD

- Designed and created PCBs for custom keypad
- Developed firmware for the keypad. Firmware was later contributed to the open source QMK library

Synbiolic - AI Drug Discovery - Python, PyTorch, React, Django, Azure

- Microsoft Image Cup 2020 North American Finalist
- Probabilistic model to produce possible drug candidates and decrease drug discovery time
- Developed first iteration of stacked RNN algorithm for small molecule generation in PyTorch

TakeAways - Chrome Extension - Javascript

- Chrome extension which quickly produces summaries of web pages to make it easier to skim through dense web articles
- Created web scraper and filter algorithm to identify article text on a website and prepare it for processing
- Designed algorithm to use noun frequency to heuristically determine the most common topics so that they may be presented to the user

Chess Engine - Javascript, TensorflowJS

- Developed chess AI using Alpha-Beta searching to evaluate board positions
- Implemented heuristic techniques to optimize move searching
- Trained evaluation function using TensorflowJS and database of over 20,000 chess games
- Incorporated open source libraries to produce intuitive user interface

Polynomial Regression Calculator - C++

- Created custom Matrix class to support matrix algebra in C++
- Implemented Vandermonde Matrix algorithm for polynomial regression

Education

University of Waterloo 2021 - 2026

Candidate for Bachelor of Applied Science in Mechatronics Engineering GPA: 3.97