Arthur K. Zhang

Project Portfolio: www.arthurkzhang.com
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Education

University of Michigan, Ann Arbor, MI ***May 2022***
Bachelors in Science and Engineering in Computer Engineering *GPA: 3.85/4.0*
Coursework: Algorithms and Data Structures, Logic Chip Design, Differential Equations

Work Experience

Sandia National Laboratories (Software Engineering R & D Intern) ***May - August 2019***

- Constructed a full-stack web platform to visualize and analyze radiological data from nuclear detectors for scientists in Lawrence Livermore and Pacific National Labs
- Optimized regression algorithms for radiation particle analysis and built Docker continuous integration pipeline

Clinc (Software Engineering Intern) ***June - August 2018***

- Developed and optimized website features on Spotlight AI platform across full web stack to improve user experience for global corporate clients, such as isBank and USAA
- Architected an end-to-end automated testing infrastructure that reduced bugs pushed to production by 40%

Extracurricular Activities

University of Michigan Spark Electric Motorcycle Racing Team ***August 2018 - Present***

- Built in-browser telemetry system GUI using javascript with Vue.js and sensor fusion algorithm in C for displaying real-time motorcycle performance metrics
- Designing custom PCBs for telemetry and battery management systems using Altium Designer and programming embedded systems in C to improve motorcycle battery performance during races

Shift Student Creator Space ***August 2018 - Present***

- Designing and manufacturing several embedded C projects, including an electric longboard and speed controllers

Projects

Dead Reckoning (https://github.com/KingArthurZ3/Dead-Reckoning)

- A position tracking algorithm that reads 9 axis accelerometer data and uses custom Kalman Filter, I2C, and Sensor Fusion algorithms; built for the STM32F1xx ARM-based microcontroller and completely written with C
- Controls three microcontrollers in parallel with Byzantine Generals algorithm to support triple fault redundancy

Electric Longboard (http://www.arthurkzhang.com/#/projects)

- Electric Longboard with a custom battery management system and Bluetooth nunchuck controller; designed with Altium, Autodesk Inventor, and programmed in C
- Retrofitting Wii Nunchuck and speed controllers with Bluetooth sensor module to control speed controllers; wrote CAN communication code in C to synchronize dual wheel motors

Mr. MarketWatch (https://github.com/KingArthurZ3/MrMarketWatch)

- A collection of ML models that analyze stock market technical data and recommend specific stocks to buy based on their predicted profit/loss ratio; written in Python and Javascript on top of Tensorflow and Vue.js frameworks

Fashion-Mnist (https://github.com/KingArthurZ3/fashion-mnist)

- A Convolutional Neural Network that recognizes images of clothing and classifies them by clothing type; analyzed in Python with Tensorflow Backend

Breast Cancer-Analyzer (https://github.com/KingArthurZ3/breastcancer-detector)

- A Random Forest Classifier Model that analyzes features in breast cancer diagnoses to determine if it is malignant or benign; programmed in Python on top of Sci-kit learn libraries

Sentiment Reviewer (https://github.com/KingArthurZ3/sentiment-reviewer)

- A Convolutional Neural Network that determines whether a user likes or dislikes a business by using NLP to process their reviews; written in Python using Sci-kit learn libraries

Skills

Computer Programming: C++, C, Javascript, Python, Java, Matlab, Tensorflow, React.js, Vue.js, Django, Selenium, MySQL
Computer-Aided Design: Autodesk Inventor, Altium PCB Designer, Autodesk Eagle, Solidworks