

Arthur K. Zhang

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Education

University of Michigan, Ann Arbor, MI

Bachelors in Science and Engineering in Computer Engineering
Coursework: Differential Equations, Discrete Mathematics, Algorithms and Data Structures

May 2022

GPA: 3.847/4.0

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
- Engineered regression algorithms for radiation particle analysis and dockerized continuous integration pipeline

Clinic (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 and 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 electric longboard with custom electronics from the ground up using Autodesk Inventor, CATIA V5, and Altium Designer
- Researched and fabricated in-hub motor from scratch, performed stress analysis and motor simulations with Inventor

Projects (Github: <https://github.com/KingArthurZ3>

Personal Portfolio: www.arthurkzhang.com)

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

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

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

- Electric Longboard with custom built in hub motors and battery management system; designed with Altium, Autodesk Inventor, and CATIA V5

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

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

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

- A Neural Network written 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, Tensorflow, React.js, Vue.js, Django, Java, Matlab, Selenium, MySQL

Computer Aided Design: Autodesk Inventor, Altium PCB Designer, Autodesk Eagle, Solidworks, CATIA V5,

Other: Microsoft Excel, Adobe Photoshop, Adobe Lightroom