

EDUCATION

UNIVERSITY OF PENNSYLVANIA (PENN)	Expected Graduation: May 2023
MSE in Computer and Information Science	
UNIVERSITY OF CALIFORNIA, SAN DIEGO (UCSD)	Sep 2017 - Jun 2021
BS in Computer Science	Major GPA: 3.961 / 4.0
BA in Economics	Major GPA: 3.714 / 4.0

SKILLS

Languages: Python, Java, C++, C, Swift, Pascal, HTML, CSS, JavaScript, PHP, SQL, Assembly (ARM Cortex-A, MIPS, x86), R

Tools: NumPy, SciPy, Tensorflow, Anaconda, Git, OpenCV, Linux, Bash, Vim, Boost.Asio, g++, Xcode, React Native, Flutter, GDB, Eclipse, MongoDB, MySQL, PostgreSQL, Spring Framework, Stata

WORK EXPERIENCES

RESEARCH SCIENTIST, Nanotools Bioscience	Mar 2020 - Jun 2021
<ul style="list-style-type: none"> Researched methods to segment individual cardiomyocyte cells' boundaries in videos and to extract and analyze action potential and contraction traces using image processing, computer vision, machine learning, and signal processing methods, with NumPy, OpenCV, SciPy, SKLearn, etc. Built a Python GUI application to allow researchers to batch process videos or sets of images using the method researched with TKinter, Threading, and Pyinstaller. The application was built with future extension in mind. 	
COMPUTER SCIENCE TUTOR, University of California, San Diego	Apr 2019 - Jun 2020
<ul style="list-style-type: none"> Tutored computer science courses and assisted professors by holding office hours, grading homework, and creating exam questions. 	
JAVA ENGINEER INTERN, Shanghai Amarsoft Info Tech Corp for Wanda Group	Aug 2018 - Sep 2018
<ul style="list-style-type: none"> Utilized Java, Oracle, and Tomcat to build, manage, and service a dynamic and expandable loan control management system. 	
FULL STACK DEVELOPER, Shanghai Greenpool Environmental Tech Co., Ltd.	Jun 2017 - Sep 2018
<ul style="list-style-type: none"> Plan, build, and maintain the entire architecture of a dynamic website with LAMP model and responsive UI design from scratch. 	

RELEVANT PROJECTS AND COMPETITIONS

BOMBING MULTIPLAYER 3D 3 RD -PERSON-VIEW GAME, La Jolla, CA	Mar 2021 - Jun 2021
<ul style="list-style-type: none"> Designed and programmed networking with Asio framework for one server and up to 4 clients, and game state synchronization. 	
TOTAL WEALTH PREDICTION, La Jolla, CA	Jan 2021 - Mar 2021
<ul style="list-style-type: none"> Predict the total wealth given quantitative and categorical features about individuals using R and SIPP data. Used machine learning and statistical methods including Polynomial Transformation, GAM, Spline, Stepwise Selection, ANOVA, etc. 	
STOCK PREDICTION USING TRUMP'S TWEET, La Jolla, CA	Sep 2019 - Dec 2019
<ul style="list-style-type: none"> Assess stock market's reaction to Donald Trump's tweet with Tensorflow, using word embeddings and LSTM. Level 2 data of S&P 500 sourced from Wharton Research Data Service (WRDS). Trump's tweets sourced from thetrumparchive.com. Our experiment shows improvement in accuracy when using LSTM instead of our baseline model, Linear Regression. We can show that stock's reaction is not random such that Trump's tweets do have impacts on the stock market. 	
STUDENT AND STUDENT HOUSING @ssh.zhukaihan.com, La Jolla, CA	Mar 2019 - Jun 2019
<ul style="list-style-type: none"> Built a React Native application to allow UCSD students to rent or find houses for rent easily, as the software architect of the team. 	
OBSTACLE DETECTION (ECE DESIGN COMPETITION) @od.zhukaihan.com, La Jolla, CA	Feb 2019 - Jun 2019
<ul style="list-style-type: none"> Used technologies to help detect obstacles that may cause patients with Parkinson's disease to fall. Co-lead the team to partition workloads, manage collaboration strategy, advise appropriate technologies. Programmed an iOS data collection software that encoded disparity map from dual-camera system to the alpha channel of an PNG image. Trained a single shot detector with Tensorflow Object Detection API to detect potholes, unlevel concretes, stairs, edge of the sidewalk, etc. Deployed the trained model onto an iOS application using Tensorflow Lite. 	
STOCK PREDICTION USING HISTORICAL DATA, Shanghai, China	Jul 2017 - Aug 2017
<ul style="list-style-type: none"> Predict a stock's trend using historical data with deep learning with Tensorflow, using LSTM RNN combined with CNN. Studied CS231n from Stanford University. Implemented most-used layers with NumPy using Python. Realtime data sourced from AlphaVantage. Understood deep learning, backpropagation, the use and ideology of different layers, and the methodology of different networks. 	
CRC (CHINA ROBOTICS CHALLENGE, POST SEASON FRC), Shanghai, China	Jun 2016 - Aug 2016
<ul style="list-style-type: none"> Developed an OpenCV algorithm to detect a targeting shape with the robot's controller, RoboRio, and a vision controller, NVIDIA Jetson TK1. 	