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EDUCATION

UC BERKELEY

BS IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCES

May 2017 | Berkeley, CA
College of Engineering
High Honors (Magna Cum Laude)
Cum. GPA: 3.85 / 4.0
Major GPA: 3.84 / 4.0

LINKS

Github:// AlexKashi
LinkedIn:// AlexKashi

COURSEWORK

UNDERGRADUATE CS

Introduction to Machine Learning
Operating Systems
Artificial Intelligence
Internet Architecture and Protocols
Computer Security
Efficient Algorithms

UNDERGRADUATE EE

Feedback Control Systems
Analog Integrated Circuits
Introduction to Robotics
Introduction to Embedded Systems
Signals and Systems
Microelectronic Devices and Circuits

SKILLS

PROGRAMMING

Professional Proficiency
Python • Java • Android • C++

High Proficiency

C • GraphQL • AWS • \LaTeX
Matlab • Tensorflow • OpenCV

Working Proficiency

Qt • ROS • C#

AFFILIATIONS

2016 Camp Kesem
2015 Eta Kappa Nu Electrical Engineering
Honor Society (Top 25%)
2013 Academic All American (Water Polo)

AWARDS

National Intel Scholarship
Regional Silicon Valley Eng. Council
Regional Top Senior Thesis - FHS

EXPERIENCE

STANFORD GENOME LAB | RESEARCHER, DEPARTMENT OF BIOCHEMISTRY

April 2018 - Present | Stanford, CA | Advisor: Dr. Robert Phair

Python

- Used CNNs to classify images of red blood cells taken by scanning electron microscopy to determine the distribution of cell morphologies caused by oxidation
- Designed an image segmentation algorithm to extract individual cells from images containing hundreds of cells for training and testing the classifier
- Analyzed whole genome sequences collected on severely ill ME/CFS
- Extracted several significantly enriched genes specific to ME/CFS patients

September 2017 - April 2018 | Stanford, CA | Advisor: Prof. Ronald W. Davis

- Optimized nanosensors for the diagnosis and treatment of Myalgic Encephalomyelitis (ME/CFS)
- Applied scientific computing skills to devise a feature extraction algorithm and classifier for ME/CFS based on the data collected by nanosensors
- Developed hardware and software for a low-cost impedance measurement device
- Wrote manuscript published by PNAS

ZSPACE | SOFTWARE ENGINEERING RESEARCH INTERN

May 2016 - Aug 2016 | Sunnyvale, CA

Python • C++ • C#

- Utilized deep convolutional neural networks to design a gaze tracking system compatible with polarized 3D glasses
- GPU accelerated using the Theano machine learning framework
- Trained on over 10GB of data collected from 36 participants on a proprietary data collection application
- Processed and classified images from infrared cameras in real-time

INTEL | UNDERGRADUATE TECHNICAL INTERN - CLIENT R&D

May 2015 - Aug 2015 | Santa Clara, CA

Java • C++ • C

- Implemented a general solution to local big data processing on Android devices
- Designed an application for my generalized MapReduce framework by implementing k-means clustering to decrease the local data footprint on servers
- Developed highly optimized parallelized libraries using android NDK in native C/C++

PROJECT EXPERIENCE

FULL-STACK ANDROID DEVELOPMENT

Java • GraphQL • AWS

- Designed fully featured Android social networking application from the ground up
- Back-end designed using AWS amplify, deployed with Serverless Framework
- DynamoDB NoSQL database streamed to Elasticsearch over Lambda for handling complex queries
- Authentication and security provided by AWS cognito, and IAM roles
- Caching and loading data from the back-end using android architecture components

LOW COST RELIABLE LOCALIZATION OF DRONE

Python

- Created a low-cost alternative to a Vicon Motion capture system to enable indoor aerial delivery via drone
- Reduced the cost by only requiring a standard HD webcam and an array of AR tags
- Connected multiple AR tags rigidly to the origin, allowing for rigid body transforms to locate the drone in global coordinates
- Acquired a single pose estimation with the ROS package ar_track_alvar and used MAVROS to communicate with the Pixhawk PX4 2.4.8 flight controller

PUBLICATIONS | STANFORD

Healthcare • Nano-electronics Biosensor • Machine Learning • Artificial Intelligence

Esfandyarpour R., Kashi A., Nemat-Gorganib M., Wilhelmy J., & Davis R. (2019). A nanoelectronics-blood-based diagnostic biomarker for myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). Proceedings of the National Academy of Sciences.