Alex Kashi

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EDUCATION

UC BERKELEY

BS in Electrical Engineering and Computer Sciences
May 2017 | Berkeley, CA
College of Engineering
High Honors (Top 10%)
Cum. GPA: **3.85** / 4.0
Major GPA: **3.84** / 4.0

LINKS

AlexKashi.github.io
AlexKashi
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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 • ElasticSearch
Tensorflow • OpenCV • LaTeX

Working Proficiency
Qt • ROS • C# • NodeJS

AFFILIATIONS

2016 Camp Kesem
2015 Eta Kappa Nu
IEEE Honor Society
2013 Academic All American
(Water Polo)

AWARDS

Regional Silicon Valley Eng. Council
National Intel Scholarship
Regional Top Senior Thesis
Regional High School Valedictorian

EXPERIENCE

STANFORD GENOME TECHNOLOGY CENTER | Researcher

Sep 2017 - Present | Stanford, CA | Advisors: Prof. Ronald W. Davis & Dr. Robert Phair
Python

- Devised the first classifier for Myalgic Encephalomyelitis (ME/CFS) based on the data collected by our sensor and my feature extraction algorithm, published in *PNAS*
- Developed hardware and software for a low-cost impedance measurement device
- Optimized the above technologies from inception to a commercially viable product
- Designed an image segmentation algorithm to extract individual cells from SEM images
- Used CNNs to determine the distribution of blood cells for clinical diagnostics
- Published manuscript in *Diagnostics* for the metabolic and genetic origin of ME/CFS

INTEL | Software Engineer

Jun 2017 – Sep 2017 | Santa Clara, CA
C • ASL

- Improved drivers for I2C and UART interfaces, including touch screens and cameras
- Debugged BIOS ASL code, added features and configuring new peripherals
- Programmed firmware for x86 based R&D devices

ZSPACE | Software Engineering Research Intern

May 2016 – Aug 2016 | Sunnyvale, CA
Python • C++ • C#

- Utilized CNNs to design a gaze tracking system compatible with polarized 3D glasses
- Used the Theano machine learning framework for GPU acceleration
- Trained on over 10 GB of data collected from 36 participants on a proprietary data collection application
- Classified test images from infrared cameras in real-time

INTEL | Undergraduate Technical Intern - Client R&D

May 2015 – Aug 2015 | Santa Clara, CA
Java • C++ • C

- Architected a MapReduce framework for local big data processing on Android devices
- Parallelized the framework using pthreads in native C/C++ using the Android NDK
- Created an application for my framework by implementing k-means clustering to preprocess data locally before sending the result to the server
- Reduced server storage requirements and average query time

PROJECT EXPERIENCE

FULL-STACK ANDROID DEVELOPMENT

Java • GraphQL • AWS • Python • ElasticSearch • NodeJS

- Created a production-ready, fully-featured Android social media application
- Designed a back-end, based in AWS, using Amplify, DynamoDB, S3, Lambda, ElasticSearch, Pinpoint, IAM, and Rekognition
- Leveraged Android Jetpack for seamless caching and loading of data from the back-end
- Applied best practices using Android architecture components for caching and loading data from the back-end

LOW-COST RELIABLE LOCALIZATION OF DRONE

Python • ROS

- Created a low-cost, highly redundant alternative to a Vicon Motion capture system that enabled indoor aerial delivery via drone
- Reduced the cost by only requiring a standard HD webcam and an array of ARTags
- 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-Gorgani, M., Wilhelmy, J., & Davis, R. W. (2019). A nanoelectronics-blood-based diagnostic biomarker for myalgic encephalomyelitis/ chronic fatigue syndrome (ME/CFS). *Proceedings of the National Academy of Sciences*

Bioinformatics • Non-linear Mechanistic Modeling • Systems Biology

- **Kashi, A. A.,** Davis, R. W., & Phair, R. D. (2019). The IDO Metabolic Trap Hypothesis for the Etiology of ME/CFS. *Diagnostics*