Adam Li

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EDUCATION:

JOHNS HOPKINS UNIVERSITY **Expected: June 2019**
Doctor of Philosophy: Biomedical Engineering

UNIVERSITY OF CALIFORNIA, SAN DIEGO **March 2015**
Bachelor of Science: Bioengineering *Major GPA: 3.75/4.0*
Bachelor of Science: Mathematics-Applied Science *Major GPA: 3.74/4.0*

YALE SCHOOL OF MANAGEMENT **2014**
Global Pre-MBA Leadership Program: Selective Leadership Program
Placed 3rd in Audubon Business Concept Pitch Plan, and 2nd in Audience Choice Award

HONORS AND AWARDS:

NSF-GFRP (Honorable Mention) – Honorable mention out of 17,000 applicants 2016
Intel Cornell Cup (Finalists) – Created a prototype using Intel hardware placing in top 10 in nation 2016
NIH NETI – NeuroEngineering training initiative for 11 students out of ~500 that apply to program 2015
Frontiers of Innovation Scholars Program – Interdisciplinary fellowship out of 350 applicants 2015
California Space Grant / IDEA Center Scholarship – Recipient of competitive scholarship 2014
NCIIA E-Team Program – National selective program (~15% acceptance rate) for funding 2014
UCSD Sixth College Leadership Award – Finalist For Outstanding Leadership 2014
ASAIO – Student Design Competition Top 27 In Nation 2014
Tau Beta Pi – Engineering honor society 2014
Gordon Fellow – Engineering leadership excellence award 2014
Health and Life Sciences Grant – Interdisciplinary grant for pilot studies in translational medicine 2013
Von Liebig NSF I-Corps Fellow – Competitive startup program for NSF seed funding 2013
Chapter of the Year Award – National award from ISPE for best student chapter in the country 2012, 2013
National EWH Design 2nd Place – Placed 2nd for global healthcare engineering design 2013
Gordon Leadership Scholar – Competitive leadership program 2013
Amgen Scholar UCSD – Competitive summer research program (awarded but had to decline) 2013
California Institute for Telecommunications and IT – Competitive Summer Research Grant 2012

PRESENTATIONS AND CONFERENCES:

1. *"Analysis of Gait Applied to Parkinson's Disease",* A. Li, N. Gandhi, I. Litvan and T. Coleman, Thiel Summit Conference for Entrepreneurship, Las Vegas NV, November 11th, 2014.
2. *"GreenHaven 501© Non-Profit Business Pitch",* A. Li, A. Ruby, N. Rivat, R. Saha, A Foster and A. Terra, Yale School of Management Audubon Pitch, New Haven NH, June 29th, 2014.
3. *"The Gait Analysis of Parkinson's Disease"*, A.Li, N. Gandhi, L. Li, J. Chu, C. Yang, I. Litvan and T. Coleman, UCSD Bioengineering Day Poster Conference, San Diego CA, April 10th, 2014.

4. *"BioMetrics Analytics",* A.Li, N. Gandhi, L. Li, J. Chu, C. Yang, Von Liebig NSF I-Corps Phase 1 Pitch, La Jolla CA, March 10th, 2014
5. *"Feasibility of 3D Deformation and Strain Analyses by Micro-Computed Tomography",* A. Li, E. Cory, J. Caffrey, V. Wong, Q. Nguyen and R. Sah, ISPE Poster Competition, La Jolla CA, May 29th, 2013.
6. *"Feasibility of 3D Deformation and Strain Analyses by Micro-Computed Tomography"*, A. Li, E. Cory, J. Caffrey, V. Wong, Q. Nguyen and R. Sah, Calit2 Summer Scholars Presentation, La Jolla CA, September 21st, 2012.

RESEARCH EXPERIENCE:

COMPUTATIONAL BIOPHOTONICS LABORATORY Nov 2015 – Present

Graduate Student Researcher under Dr. Nicholas Durr Baltimore, MD

- Using photometric stereo, Phong reflection model, reconstruct colonoscopy videos into topographical surface maps to allow GIs to better diagnose lesions

NEUROMEDICAL CONTROL SYSTEMS LABORATORY Aug 2015 – Present

Graduate Student Researcher under Dr. Sri Sarma Baltimore, MD

- Utilizing machine learning algorithms, statistical modeling, network theory, high performance computing and spectral analysis to analyze EEG signals during epilepsy (Python, MATLAB on Linux Systems)

NEURAL INTERACTION LABORATORY Sept 2013 – Sept 2015

Senior Design Engineer and Undergraduate Researcher under Dr. Coleman and Dr. Litvan La Jolla, CA

- Researched and developed novel ways to evaluate Parkinson's disease using gait and 3D spatiotemporal data from the Microsoft Kinect in collaboration with Computer Vision Lab and School of Medicine.
- Started a project from scratch to develop a Parkinson's disease tracking software product using C++ and Matlab to create a data acquisition platform and signal analysis algorithms
- Mentored a senior Bioengineering design group within the design course sequence to engineer a cost-effective mobile eye tracking system in collaboration with a movement disorders specialist
- Carried out validation and clinical experiments on 21 PD and 21 control subjects, while coordinating scheduling with clinicians and patients
- Secured startup company funding from the National Science Foundation and the VentureWell E-Team Program and also applied to present at the Clinton Global Initiative University
- Wrote successful Health and Life Sciences grant and IRB to carry out pilot clinical studies in collaboration with 3 professors; awarded the Gordon Fellowship Award for outstanding engineering leadership

ENGINEERING WORLD HEALTH Sept 2012 – Sept 2014

Project Team Leader for PCR under Dr. David M Smith La Jolla, CA

- Collaborated with UCSD School of Medicine and a clinic in Mozambique to develop a rapid, cost-effective medical device for diagnosing HIV, which culminated in 2nd place for the EWH National Design Competition
- Led team of 10 in product development, while managing a budget of over $10,000. Developed firmware on microcontroller using C++ and C (utilized PID algorithm, SolidWorks and circuit design)
- Mentored and helped carry out "build days" with K-12 students to get them excited about science

QUALCOMM INSTITUTE Jun 2012 – Sept 2012

Summer Research Scholar under Calit2 La Jolla, CA

- Awarded $3000 to be a part of a 30 person cohort in order to conduct ~40+ hrs/week of independent research for the purpose of improving quality of life using emerging technologies and analytics

- Conducted initial feasibility experiments using a LabView programmed mechanical actuator to compress agarose hydrogels with embedded radiopaque particles, while imaging with 3D microCT
- Developed a computational method with 90% accuracy to measure strain and strain variance using quantitative statistical analysis

CARTILAGE TISSUE ENGINEERING LABORATORY Sept 2011 – Jun 2013

Undergraduate Researcher under Dr. Robert L Sah La Jolla, CA

- Created standard operating procedures for inventory processing, laboratory operations, tissue preparation, hydrogel polymerization, data collection methods and data analysis of CT images
- Scanned and analyzed bone and tissue images using microCT, Excel, Matlab and CT image analysis software and then documented experimental results through scientific reports
- Contributed to a large human cartilage research project by scanning ~20 samples over the course of an entire weekend for ~72 hrs straight; in collaboration with orthopedic surgeons and post-docs of lab

INDUSTRY EXPERIENCE:

BIOMETRICS ANALYTICS Sept 2013 – Sept 2015

Chief Executive Officer & Co-Founder San Diego, CA

- Researched & developed novel ways to evaluate Parkinson's Disease using biometric sensors and robust data analysis; led team in data acquisition of human data, data analysis and statistical analysis using MATLAB and Python
- Developed Parkinson's disease tracking software using Microsoft Kinect with C++, C#, MATLAB and Python to create data acquisition and machine learning algorithms and movement analytics
- Raised over $20,000 and filed an IRB for carrying out pilot clinical human study; received the Gordon Fellowship Award for outstanding engineering leadership (awarded to 3 students/year at UCSD)
- Accepted into the Von Liebig National Science Foundation I-Corps Program as well as the NCIIA Entrepreneurship Program (~15% acceptance rate)

UCSD COMPUTER SCIENCE Sept 2014 – Mar 2015

Computer Science Tutor under Gary Gillespie San Diego, CA

- Sole bioengineer in cohort, assisted 100+ students in learning basic data structures in Java, C and C++
- Graded exams and assisted professor in communicating fundamental concepts in computer science

WEST HEALTH INSTITUTE 501© Jun 2014 – Jun 2015

Data Processing Intern under Asim Mittal San Diego, CA

- Researched and recommended technological improvements to data collection that could be incorporated into the analytics group at the institute for the treatment of Autism Spectrum Disorder
- Wrote pymongo queries running on an event scheduler (python, MongoDB) that provide metrics and analytics for the clinical team to analyze behavior during gameplay on the Microsoft Kinect
- Developed clinical web forms using HTML, CSS, Highcharts.JS, JavaScript (with JQuery), which are then linked to a DB with Node.js; tested on an AWS instance using git and bitbucket VCS
- Built an Android application that created a custom launch screen for the clinical team with Java and XML

GENENTECH INC. Jul 2013 – Jun 2014

Process Engineering Intern and College Ambassador under Domenic Schmizzi San Francisco, CA

- Collaborated with Genentech College Programs to improve online engagement by ~60%, while coordinating events with directors and human resources that drew in over 200 attendees

- Implemented a new batch control process using Rockwell Automation and PLCs to automate chromatography purification process (used Structured Text, Sequential Flow Charting, SQL and Python)

LEADERSHIP AND OTHER EXPERIENCE:

THREAD Nov 2015 – Present

Volunteer – engage underperforming high school students

GRADUATE REPRESENTATIVE ORGANIZATION Sept 2015 – Present

BME Department Representative

ALPHA KAPPA PSI @ UCSD Apr 2012 – Jun 2014

Class President and Director of Consulting

INTERNATIONAL SOCIETY FOR PHARMACEUTICAL ENGINEERING @ UCSD Sept 2011 – June 2014

Vice President External

COMPETITIONS:

HOPHACKS (1st place in Biomedical Data Challenge) Feb 2016

- Created web app for web scraping, data visualization and search functionality of clinical trials in the USA

HACKPRINCETON (Microsoft Data Challenge) Nov 2015

- Developed Python/MongoDB backend, and preprocessed data into JSON for analytics and big data analysis

MEDHACKS @ JHU 2015 (1st place) Oct 2015

- Developed apparatus using ultrasound transducers, raspberry PI and web server to detect blood clots

MICROMOUSE @ UCSD 2015 May2015

- Developed micromouse with Teensy microcontroller, custom PCB, flood-fill alg, PID alg using C++/C

SKILLS/PROGRAMMING:

Computational:

1. ***MATLAB*** *(5 years, advanced)* – all around use for computational analysis
2. ***Python*** *(3 years, intermediate/advanced)* – used Pymongo, scikit, numpy, IPython
3. ***C and C++*** *(3 years, intermediate)* – familiar with data structures, std library, OO programming

Web/Mobile Technologies:

1. ***HTML/CSS/ Javascript*** *(2 years, intermediate)* – familiar with web site building, UI and dynamic web function
2. ***Django/Flask*** *(1 year, intermediate)* – built many websites with secure UI in mind
3. ***Android/iOS*** *(1 year, intermediate)* – familiar with Java/Swift, XML Layouts, backend of mobile
4. ***Unix*** *(3 years, beginner)* – basic understanding of navigating terminal and Linux systems

Databases/Hosting:

1. ***PostgreSQL*** *(2 years, intermediate)* – familiar with web site building
2. ***SQLite*** *(2 years, intermediate)* – created blog sites and comment models
3. ***AWS/Heroku/PythonAnywhere*** *(1 year, beginner)* – using free hosting to deploy websites

Prototyping:

1. ***Arduino/Raspberry Pi*** *(4 years, intermediate)* – sound understanding of how to prototype
2. ***Electronics/SolidWorks*** *(4 years, intermediate)* – diverse experience with sensors and hardware