William Liu

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Education

Carnegie Mellon University, Class of 2020
Bachelor of Science
Major: Cognitive Science
Minor: Robotics
Alpha Epsilon Pi Fraternity

Select Coursework:
Intro to Machine Learning 10-401
Great Ideas in Theoretical CS 15-251
Functional Programming 15-150
Cognitive Psychology 85-211

Skills

Technical:
C, Python, SML, HTML, Javascript, CSS, Arduino, Raspberry Pi, Unity 3D
Design:
InDesign, Photoshop, Illustrator, SolidWorks, AutoCAD, Inventor, Blender, Laser Cutting, 3D Printing
Misc:
LaTeX, Gantt Charts, Chinese, Spanish

Clubs/Activities

Scotch'n'Soda Theatre
Stage and Production Manager, Web Admin

CMU Tricking Club
Founder, President
Tricking is "an aesthetic blend of gymnastics, martial arts, and breakdancing."

Student Advisory Board
Board Member

Additional Awards

TartanHacks, Feb 2017
Grand Prize, Facebook's Favorite Hack

United States Congress, June 2016
Congressional Award

Interests/Misc.

Top 100 Pokémon Player,
Filmmaking, League of Legends

Experience

Uber Advanced Technologies Group
Software Engineering Intern, May 2018 — August 2018
Will work on flexible and robust self-driving car operating system.

Computer Architecture Lab at Carnegie Mellon (CALCM)
Researcher, Dec 2016 — Present
Discovered up to 12.2% energy savings from efficient DRAM memory placement. Designing new memory allocation protocol for non-contiguous data structures in graph algorithms. Pushing patch for Linux and other operating systems.

The Articulab — Human Computer Interaction Institute
Research Assistant, Aug 2017 — Dec 2017
Designed and prototyped the very first user model for a rapport-building virtual agent. Wrote paper introducing modeling techniques specific to rapport.

Carnegie Mellon University — School of Computer Science
Teaching Assistant for Pricipals of Computation (15-110), Aug 2017 — Present
Led lab sections to teach students computer science principles using Python. Graded homeworks and exams, and held office hours for additional guidance.

Projects + Awards

More at *williamliu.me/portfolio.html*

Modware | PennApps VXII — 2nd Place + Hacker's Choice + IoT Award, Jan 2018
Hardware prototyping platform for software-focused developers.
Created distributed hardware stack with magnetic data and power connections and server for generating APIs and data synchronization.
2nd Place out of 300+ teams at University of Pennsylvania.

Facebook Discourse | Facebook Global Hackathon — Grand Prize, Nov 2017
Hardware-software integrated debate digitizer and organizer. Presented to the VPs of Technology of OculusVR, Instagram, Messenger, and WhatsApp.
Coordinated a fullstack webapp, hardware stack, and ML modules from Google Cloud Computing using 5 communication protocols and 8+ technologies.
Best of 14 finalists from 11 different countries.

ResistAR | TartanHacks — Grand Prize + Facebook's Favorite, Feb 2017
Augmented Reality circuit visualizer and solver.
Computations based in 3D calc and matrix theory. Coordinated with Unity3D.
Best of 150+ teams at Carnegie Mellon University.

Mars Ascent Vehicle | NASA Student Launch — Second Place, Apr 2016
One mile apogee rocket + Autonomous Ground Support Equipment (AGSE) to secure payload from ground and prep rocket for launch. Presented to NASA engineers.
Designed and built with size and budget constraints from NASA's specifications.
Our payload mechanisms will be used in NASA SLS's mission to Mars.

Publications

"Experimental Characterization and Analysis of DRAM Energy Consumption and Variation" *Under Peer Review, SIGMETRICS 2018.*
G Yaglikci, R Gupta, **W Liu**, K Chang, K Kudrolli, A Agrawal, D Lee, N Chatterjee, M O'Connor, S Ghose, and O Mutlu.