

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

Managed: Heathers The Musical, Rosencrantz and Guildenstern, Young Frankenstein, and The House of Yes

CMU Tricking Club

Founder, President

Tricking is "an aesthetic blend of gymnastics, martial arts, and breakdancing."

Additional Awards

PennApps XVI, Sep 2017

Best Hardware Hack

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

Updated: Feb 12, 2018

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

Examined manufacturer-specified DRAM energy levels (IDD values). Discovered up to 12.2% energy savings from efficient memory placement.

Designing new memory allocation protocol for non-contiguous data structures in machine learning tasks. 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. Examined the current user modeling methods, and improved on user model goals and backend design.

Carnegie Mellon University — School of Computer Science

Teaching Assistant for Principals 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.

- **2nd Place out of 300+ teams at University of Pennsylvania.**

- Created distributed hardware stack with magnetic data and power connections and server for API generation/passthrough and data synchronization.

Facebook Discourse | Facebook Global Hackathon — Grand Prize, Nov 2017

Hardware-software integrated debate digitizer and organizer. Presented to the VPs of Technology of Oculus VR, Instagram, Messenger, and WhatsApp.

- **Best of 14 finalists from 11 different countries.**

- Coordinated a fullstack webapp, hardware stack, and Machine Learning from Google Cloud Computing using 5 communication protocols and 8 technologies.

ResistAR | TartanHacks — Grand Prize + Facebook's Favorite, Feb 2017

Augmented Reality circuit visualizer and solver.

Best of 150+ teams at Carnegie Mellon University.

- Computations based in 3D calc and matrix theory. Coordinated with Unity3D.

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.

- **2nd Place out of 10 finalists from 100+ colleges as only High School Team.**

- 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.