Alex N. Walczak

2540 College Ave.
Apartment 402
Berkeley, CA 94704

(425) 350-8482
awal@awal.io
awal.io

Interests Control theory, systems theory, automation, machine learning.

Education

University of Washington, Seattle (September 2017-present)
Master's & Ph.D. in Electrical Engineering
Research focus: Human-cyber-physical systems, which are engineered systems that are built from, and depend upon, the seamless integration of computational algorithms, physical components, and human interaction. Synthetic biology.

University of California, Berkeley (2013-May 2017)
B.A. in Computer Science

Courses

CS189: Machine Learning	CS162: Operating Systems
CS170: Algorithms	EE123: Digital Signal Processing
EE222: Nonlinear Control Theory	EE126: Statistics & Probability

Research & Experience

Computer Vision Research Intern — **Taipei, Taiwan**
Umbo CV — **Summer 2016**

I developed a program to do online few-shot learning with an ordinary laptop and webcam. On top of Google's Inception V3 convnet, I created an additional architecture, which automatically expands as new objects are seen. I also presented current computer vision publications at computer vision group meetings.

Undergraduate Researcher — **Berkeley, CA**
UC Berkeley EECS Department and Lawrence Berkeley National Lab — **Fall 2014-Present**

I am on a team building a novel biosensor that functions by measuring electrical impedance of *E. coli*. In the last two years, I have developed an automated segmentation algorithm for analyzing fluorescence traces of *E. coli*. I also wrote a program to analyze the distribution of bacterial volumes from a 2D image. Finally, using OpenSCAD I designed and 3D printed microfluidic flow cells.

Languages & Software

Python	Java	C	iOS (Swift)
Torch with Lua	git & Agile	Android UI	Mathematica

iOS Projects For an iOS final project, I developed an app that tracks users' activity in real time. This app utilizes the iPhone's sensing capabilities, converting accelerometer, GPS, and gyro data to activity level, distance traveled, and speed. Animated charts visualize results for the day, week, month, or year.

Recognitions
Berkeley CITRIS Invention Lab Fellowship 2016
Huang Scholar: scholarship to study Chinese in Beijing 2015 and hold an internship in Taiwan 2016
Scholarship to study Southeast Asian culture in Singapore (NUS) 2014

Hobbies & Other
Chinese language, College Ski and Snowboard Club,
Native Polish speaker