Alvin T. Vuong

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Education

University of California - Los Angeles **(expected) 2013 - 2017**

B.S. in Computer Science, Minor in Cognitive Science

GPA: 3.287 * = In Progress

Relevant Coursework:

- Operating Systems (CS 111)
- Algorithms & Complexity (CS 180)
- Programming Languages (CS 131)
- Intro to Linguistic Analysis (Ling 20)
- Machine Learning (Coursera)
- Sensation and Perception (Psych 120B)
- Neuroethics (Psych 188A)
- * Computational Genetics (CM 124)
- Logic Design of Digital Systems (CS M51A)
- Fundamentals of Artificial Intelligence (CS 161)
- Linear Algebra & Discrete Structures (Math 33A & 61)
- Formal Languages and Automata Theory (CS 181)
- Advanced Game Development for Virtual Reality (CS 188)
- Digital Design Laboratory (CS M152A)
- * Intro to Phonetics (Ling 103)
- * Cognitive Psychology (Psych 120A)

Extracurricular Activities:

- UCLA Archery Team | UCLA CS:GO Gold Team
- UCLA Association of Computing Machinery | UCLA Cognitive Science Student Association

Experience

Rissman Memory Lab | Research Assistant **June 2015 – Present**

rissmanlab.psych.ucla.edu

Neural Correlates of Fluid Intelligence & Depression using the Human Connectome Project **June 2015 –**

- Working with Nicco Reggente under Dr. Jesse Rissman on using functional magnetic resonance imaging (fMRI) and diffusion tensor imaging (DTI) data from the Human Connectome Project (HCP) to account for individual differences in fluid intelligence, memory strength, and reward.
- Currently writing Matlab and shell scripts to perform complex analyses over many subjects and examining the correlations to their behavioral scores on the Penn Progressive Matrices test and various NIH Toolbox tasks.

Avatar Learning in Virtual Environments **Jan. 2016 –**

- Working under Joey Essoe and Nicco Reggente on investigating the cognitive and neural mechanisms of learning and memory that occurs within virtual reality and their implications for future training and educational purposes.
- Currently MRI safety certified and CITI-trained, I help run and score participants, as well as troubleshoot hardware.

Select Projects

(More @ imatv.me)

EmoCar

devpost.com/software/emocar

- Mind-controlled Arduino-based rover controlled by an Emotiv EPOC EEG neuroheadset.
- Handled the decryption and visualization of the headset data using Emokit, an open-source driver for raw data access, and Pygame.
- Set up a simple brain-computer interface in Python for interpreting brain signals as robotic motor functions.
- Winner of MuleSoft's Most Connected Hack at Cal Hacks, hosted at UC Berkeley.

FindAR

devpost.com/software/findar

- Augmented reality application using an Oculus Rift, a webcam, and OpenCV to facilitate real-world search (visual filters & face/object recognition).
- Developed an API in C++ for handing web socket input to control the application using a Pebble Smartwatch.
- Used OpenCV C++ library to handle webcam feed and applied color isolation filters to ease search for lost objects.
- Awarded First Place & Top Oculus Hack at Hero Hacks, a wearable technology hackathon. Devpost Staff Pick.

DodgeLodge

devpost.com/software/dodgelodge

- Full-body virtual reality dodging game, built using Unity, a Microsoft Kinect V2, an Oculus Rift, and a Leap Motion.
- Used the Unity Leap Motion API to extract directional finger pointing data for use in projectile firing.
- Assisted in using the Unity Kinect API to map player's joint and skeletal orientation to an in-game model.
- Unity game logic and design for demo showcase.
- Top Ten Hack, sponsored by HBO, at LA Hacks 2016, hosted at UCLA.