# 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: 3.216

*Relevant Coursework:* * = In Progress

- Operating Systems (CS 111)
- Algorithms & Complexity (CS 180)
- Programming Languages (CS 131)
- Linear Algebra (Math 33A)
- Discrete Structures (Math 61)
- Logic Design of Digital Systems (CS M51A)
- Intro to Cognitive Science (Psych 85)
- Intro to Linguistic Analysis (Ling 20)
- Machine Learning (Coursera)
- * Fundamentals of Artificial Intelligence (CS 161)
- * Intro to Formal Languages and Automata Theory (CS 181)
- * Advanced Game Development for Virtual Reality (CS 188)

*Extracurricular Activities:*

- UCLA Archery Team
- UCLA CS:GO Gold Team
- UCLA Association of Computing Machinery - Artificial Intelligence Club

## Experience

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

rissmanlab.psych.ucla.edu

- Working with Niccolo Reggente under Dr. Jesse Rissman on using diffusion magnetic resonance imaging (dMRI) 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 using probabilistic tractography over many subjects' dMRI data and examining the correlations to their behavioral scores on various IQ tests and tasks.

**USA Archery | Electronic Scoring Team** **June - July 2014/15**

- Prepared and helped manage electronic scoring systems for two nationally endorsed archery tournaments: SoCal Showdown, U.S. National Target Championships/Easton JOAD Nationals.
- Shadowed the use of Ianseo and Rcherz, two archery scoring database systems (SQL-based) that contained the scoring data of archers at the competitions.

## Select Projects

**EmoCar**

challengepost.com/software/emocar

- Mind-controlled Arduino-based rover controlled by an Emotiv EPOC EEG neuroheadset.
- Handled the decryption of the headset data using Emokit, an open-source driver for raw data access, and graphed the EEG data using 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.

**Hartbeat**

challengepost.com/software/hartbeat

- Heart rate-based First Person Shooter built using Unreal Development Kit and an Arduino optical heart rate sensor.
- Wrote UnrealScript that varied the bullet spread in-game based on the player's heart rate.
- Utilized Flash ActionScript to dynamically alter the Heads-Up Display accordingly.
- Map creation using UDK to test spread dynamics and other various functionalities.

**FindAR**

challengepost.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 Overall & Top Oculus Rift Hack at Hero Hacks, a wearable technology hackathon.