Alvin T. Vuong

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Education

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

B.S. Computer Science, Minor in Cognitive Science

GPA: 3.38

Relevant Coursework: * = In Progress

- Operating Systems (CS 111)
- Algorithms & Complexity (CS 180)
- Programming Languages (CS 131)
- Fundamentals of Artificial Intelligence (CS 161)
- Data Mining (CS 145)
- Machine Learning (Coursera)
- * Neural Networks (Psych 186B)
- Logic Design of Digital Systems (CS M51A)
- Digital Design Laboratory (CS M152A)
- Linear Algebra & Discrete Structures (Math 33A & 61)
- Mathematical Modeling and Methods (CS 170A)
- Formal Languages and Automata Theory (CS 181)
- Advanced Game Development for Virtual Reality (CS 188)
- * Computer Systems Architecture (CS M151B)
- * Product Strategy (Engr 113)

Extracurricular Activities:

- UCLA Archery Team | UCLA MentorSEAS | Hacker Fund Mentor
- UCLA Association of Computing Machinery – AI, Hack, & VR/CG | UCLA Cognitive Science Student Association

Experience

The Coding School — Sept 2016 -

Unity Instructor - the-cs.org

- Teaching Unity 3D game development and computer science to K-8 students in the Los Angeles area.

Unity Technologies — June - Aug 2016

Research Consultant - unity3d.com | Dr. Diana Ford

Virtual Reality Guided Narrative Techniques

- Used a C# wrapper of the Fast Artificial Neural Network (FANN) library as a Unity plugin in order to activate predictive cues that would grab the viewer's attention.
- The NN was trained on a variety of data from the scene, including player camera angle and focal point position.
- Demo was part of a presentation on algorithmic techniques for creating guided experiences in VR at SIGGRAPH Anaheim.

UCLA Perceptual Processing Lab — June 2016 -

Research Assistant - zililab.psych.ucla.edu | Dr. Zili Liu

Computational Motion Processing & Learning

- Writing Matlab analyses for MT-V1 task-state fMRI data in order to better understand motion processing and perceptual learning using SVM techniques.

Environmental Vertical Illusion in Virtual Reality

- Developed a VR experiment in Unity investigating the oculovestibular perception of tilted rooms. Environmental context affects human perception of their subjective vertical, resulting in perceptual illusions.

UCLA Rissman Memory Lab — June 2015 -

Research Assistant - rissmanlab.psych.ucla.edu | Dr. Jesse Rissman

Neural Correlates of Fluid Intelligence & Depression

- Wrote Matlab and shell scripts to train predictive models using fMRI & DTI data from the Human Connectome Project.

Avatar Learning in Virtual Environments

- Maintaining participant data for investigating the cognitive and neural mechanisms of learning and memory in VR.

Projects

Escality — Aug 2016 -

- Currently leading a team of five in the development of a VR escape room game.
- Use of HTC Vive and Unity VRTK SteamVR C# plugin for Unity in order to manage Vive input and functionality.

DodgeLodge — Apr 2016

- Full-body VR dodging game, built using Unity, Microsoft Kinect V2, Oculus Rift, and Leap Motion.
- Used the Unity Kinect API to map player's joint and skeletal orientation to an in-game model.
- Used the Unity Leap Motion API to extract directional finger pointing data for projectile firing.
- Top Ten Hack, at LA Hacks 2016.

Malfunction — Sept – Nov 2015

- VR puzzle game prototype using the Leap Motion and Oculus Rift in Unreal Engine 4.
- Design of novel game mechanics using the Leap Motion to solve brain teaser puzzles and to disarm an enemy robot.
- Presented in a class project showcase alongside other experimental VR game experiences.

FindAR — Aug 2014

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