

Roy Guo

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Education

Master of Engineering, Computer Science, UC Berkeley, Focus: Computer Graphics, AR/VR 08/2019-05/2020
Bachelor of Science, Computer Science, UC San Diego, Honor: Cum Laude 09/2015-06/2019

Experience

Software Engineering Intern, TuSimple Technology, San Diego, CA 10/2017-03/2018

- Simulated truck movement for autonomous driving and optimized the collision detection algorithm
- Designed a web tool for the truck movement simulation using ReactJS and Redux
- Built a MongoDB database to store simulation results

Machine Learning Intern, Microsoft Research Asia, Beijing, China 06/2017-08/2017

- Developed on early stage of Suphx, the world's strongest Mahjong AI, whose stable rank is 17% higher than top human player's
- researched on reinforcement learning approaches, such as prior coaching, to optimize information-asymmetric games
- Using Qt, built a game log visualizer to track the model's decision-making processes

Projects

Gameplay & Front-end Lead, KillStreak, OpenGL-Based Multiplayer Online Battle Arena Game 03/2019-06/2019

- Constructed an efficient physics engine with rough mesh collision to optimize server-tick rate
- Developed mouse click control for character movement, transforming a point from screen space to world space
- Implemented rendering prediction to avoid glitches caused by low server-tick rate and unstable internet
- Designed and implemented the user interfaces, such as skill indicators and prepare-phase operations
- Designed game mechanics and systems, including character skills and in-game economy

Game Programmer, A Happy Ending, Virtual Reality First Person Horror Game 01/2019-03/2019

- The winner of "Most Polished Game" and "Best Sound Effects" awards in the all-campus VR game competition
- Set up player control system using the Oculus controller API
- Implemented different environment objects interactions, including door triggers, which used linear interpolation
- Designed the storyline and gameplay mechanics, including scripts for each chapter and descriptions for triggers

Backend & Team Lead, PeterBook, Secured Multiplatform Social Network 03/2018-06/2018

- As the team lead of a ten-person project, responsible for managing progress and holding weekly meetings with the mentor
- Set up GitHub hook and Jenkins as the conveyor belt for automatic testing and deployment
- Implemented data encryption for all data in the private real-time chatting sessions using SHA-256 algorithm

Research

A Graph-based Framework to Bridge Movies and Synopses,

Oral Presentation at ICCV 2019 (4% Oral Presentation acceptance rate)

07/2018-10/2018

- Constructed a dataset called Movie Synopses Associations (MSA) over 328 movies
- Developed a framework to perform matching between movie segments and synopsis paragraphs
- Using React and Flask, built and designed a cross-platform tool for movie-related labeling jobs
- Using motion energy model, pre-processed raw movie data and movie info into segments and keyframes

Languages & Frameworks

Proficient: C, Java, OCaml, Android, Unix

Intermediate: C++, C#, HTML, CSS, JavaScript, Python

Frameworks: React, JQuery, OpenGL, GLSL, Unity3D, MongoDB, Unix, Jenkins, Nginx, Flask, Firebase, TensorFlow