

郭嘉康 JIAKANG GUO

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Education

Master of Science: Computer Science 2019
Columbia University New York, NY

Relevant Coursework: *Computer Animation / Computer Graphics / Analysis of Algorithms / Introduction to Databases*

Bachelor of Engineering: Computer Science and Technology 2018
Tsinghua University Beijing, CN

Ranking (Department) : 41 / 171

Relevant Coursework: *Software Engineering / Computer Graphics and Real Time Animation / Artificial Neural Networks / Operating Systems / Computer Architecture / Assembly Programming Language*

Experience

Research Assistant 11/2018 to Current

iBEGOO: Interactive Storytelling Platform, CGUI Lab at Columbia University

- Automated props placement and avatar control for storytellers.
- Created AR experience with Vuforia Engine, Unity.
- Implemented scenes and stories for the director in our demo App.

Student Researcher 03/2018 to 07/2018

Hierarchical Reinforcement Learning for VDAIC, TSAIL Lab at Tsinghua University

- Actively participated in team TSAIL to develop an AI agent for Visual Doom AI Competition (VDAIC, held by IEEE-CIG) and won the first place in the 2018 match.
- Developed an automatic spatial information parsing tool for classic Doom Game maps and collected a large target detection dataset.
- Trained YOLO-v3 detector on the dataset, achieving 90+% accuracy in validation scenes.
- Trained A3C model for navigating on randomly generated maps with stairs and locked doors.
- Utilized an FSM to incorporate valuable human knowledge and improved the performance in the task above.

Student Researcher 03/2016 to 10/2016

Institute of Information Cognition & Intelligent System, Tsinghua University

- Studied documents and selected five common parameters, such as compressed spectrum's entropy and singular value decomposition, as the original parameters.
- Implemented dimensionality reduction based on PDLA (Probabilistic Linear Discriminant Analysis).
- Studied the principle of Online Bayes Change-point Detection Algorithm, and accomplished the high dimension extension of the relevant formula.
- Distinguished voice signal from non-voice signal with Online Bayes Change-point Detection algorithm and developed a preliminary demo in Matlab language.

Computer Organization course project 11/2016 to 12/2016

CPU implementation Based on Xilinx FPGA

- Used Verilog to implement CPU with five level pipeline structure.
- Handled data and structural hazards.
- Developed external drivers under VGA and PS2 protocols.
- Adjusted memory timing and raise clock speed to 25MHz.

Skills

- Programming languages:
C# C++ Python Matlab Java
- Frameworks:
Tensorflow Unity ROS