Zhenyi Zhou

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EDUCATION

Master's: New York University, New York, US Sep.2023-May.2025(Expected)

Major:Computer Engineering **GPA**:3.89

- **Core Courses:** Machine Learning, Computer System Architecture, Probability and Stochastic Processes, Real Time Embedded System, Principles of Database Systems

Bachelor's: Peking University, Beijing, China Sep. 2019-Jun. 2023

Major: Computer Science and Technology

- **Core Courses:** Data Structure and Algorithm (A), Algorithm Design and Analysis, Software Engineering, Operating System,Introduction to Computer Systems,Computer Architectures,Compiler Principles

RESEARCH EXPERIENCES

Build a Visual Semantic Segmentation System Based on Deep Neural Network in Automatic Driving Scene Jan. 2022-Mar.2022

- Learned the concept of machine learning and understood convolutional neural network
- Mastered how to build convolutional neural network to solve the visual problems in the actual automatic driving scene

Research Assistant in the Center on Frontiers of Computing Studies (CFCS) Oct. 2021-Apr.2022

Advisor: Yuqing Kong, Assistant Professor, Peking University

- Analyzed and improved Avalon, a game in which players can hide their identity and cooperate with others randomly
- Used the counterfactual regret algorithm to analyze the player's optimal strategy and compute the initial winning rates of both game sides
- Made the initial winning rates of both game sides more balanced by redesigning Avalon's rule
- Mastered basic skills to solve games with incomplete information

CLASS PROJECTS

Solving Sparse Rewards with Exploration: Montezuma's Revenge Study Feb.2023-May.2023

- Montezuma's Revenge is a challenging game for reinforcement learning due to its high difficulty exploration and sparse reward.
- Let the agent explore thoroughly and find the trajectory with the highest reward
- Found the key objects from the trajectory with the highest reward
- Used the key object to design a new reward function for reinforcement learning
- Improved the average score from below 400 to 1094 by using DQN with the new reward function

A program to play the game of Amazons Dec.2019-Jan.2020

- User can play with the computer and choose difficulty
- Created a position evaluation function and used Minimax and Alpha-beta pruning to find the strategy of the computer
- Designed the chessboard with the ability to save every move and review the game

SKILLS

- Programming Languages: C++, Python, Java, JavaScript
- Technical Skills:React, MySQL, Git, Linux, MATLAB
- Languages: Chinese (Native), English(Fluent)