Zhenyuan Zhang | Resume

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Education

University of Michigan **Ann Arbor**
Bachelor of Science in Computer Science, GPA 3.9 out of 4.0 *Sep. 2019 – May 2021*
Core courses: Computer Architecture, Data Structures and Algorithms, Operating Systems, Compiler Construction

University of Michigan – Shanghai Jiao Tong University Joint Institute **Shanghai**
Bachelor of Science in Electronic and Computer Engineering, GPA 3.6 out of 4.0 *Sep. 2017 – Aug. 2021*
Core courses: Engineering Probabilistic Methods, Differential Equations, Linear Algebra, Discrete Mathmetics

Experience And Activities

Procedural Animation Project
Leader *Jan. 2021 – present*
A research project seeks to introduce methods of motion synthesis in robotics into animation systems
- Wrote an interface to the trajectory optimization library `towr` in `C++`
- Generated a trajectory database for motion matching
- Applied to real-time applications like games

Undergraduate Game Design Project
Designer and Programmer *October 2020 – Dec. 2020*
A course project for University of Michigan's game developing course
- Designed core mechanism focused on planning and executing
- Designed the code architecture
- Implemented enemy AI with complex but reasonable behavior using `Goal Oriented Action Planning`
- Tried to do narrative generation using planning algorithms

Research in ARM Lab on Trap Aware Model Predictive Control
Research Assistant *May 2020 – present*
An online model-based controller for escaping traps in novel environments
- Implemented baseline based on `Guided Policy Search`
- Implemented baseline based on `Soft Actor-Critic`

WolverineSoft Studio Game Project
Unity Programmer *June. 2020 – August. 2020*
A 3D first-person stealth horror game where the player must traverse through a castle avoiding horrible monsters
- Worked over the course of one semester with a team of 30 developers
- Created enemy animations using trajectory optimization
- Implemented an easy-to-use interacting system
- Implemented dialogue system for narrative purpose

Undergraduate Research Program
Student *Nov. 2018 – Apr. 2019*
Evaluation of Algorithms for Deep Reinforcement Learning
- Set up an unified environment that integrates different algorithms and scenarios
- Implemented reinforcement learning algorithms including `PPO` and `DDPG` in `TensorFlow`
- Implemented a benchmarking procedure for algorithm evaluating

Computer Skills

Programming Languages:
- `C++`: Have good coding style; Have experience in multiple projects
- `Rust`: Understand ownership, lifetime and type traits; Have experience in projects
- `Python`: Can implement machine learning algorithms and train agents

Game Engines: `Unity` (`C#`), `Amethyst` (`Rust`)