Jerry (Zhenjing) Yu

Gameplay Programmer | Software Engineer

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EDUCATION

Carnegie Mellon University   Pittsburgh, PA
Master of Entertainment Technology (Computer Graphics)   *Sept.2021 - expected May 2023*
Peking University   Beijing, China
Bachelor of Science in Computer Science   *Sept.2016 - June.2020*
Relevant Coursework: Computer Graphics, Mathematical Analysis, Advanced Algebra, Algorithm Design and Analysis, Data Structures, Introduction to Computer Systems, Building Virtual Worlds

PROFESSIONAL EXPERIENCE

Free Range Games | Gameplay Engineer Intern | *C++, Unreal 4*   *May.2022 - Aug.2022*
- Worked mainly on the ladder-related features in the team of *The Lord of the Ring: Return to Moria.*
- Designed and implemented the placement algorithm for procedurally generated ladders and collaborated closely with designers and artists to incorporate the ladder feature into the core building system of the game.
- Extended the current character body FSM to embed new motion correction states relevant to ladder interactions, extensively tested the code with the QA team and optimized it for better robustness in multiplayer scenarios.

Oasis Studio, ByteDance | Gameplay Engineer Intern | *C#, Unity*   *Oct.2020 - Apr.2021*
- Worked in a MMO TPS game project and implemented an efficient monster aiming system to replace AimIK.
- Wrote a highly extensible Unity editor tool for character and monster configuration which was frequently used by designers to check for data violations in configuration files and greatly increase the efficiencies of their workflows.
- Researched extensively on the climbing system of shipped AAA games and summarized the findings into a technical report as a reference for the design and implementation of the climbing feature in the game.

RELEVANT PROJECTS

Building Virtual Worlds | Lead Programmer, Designer | *C#*   *Sept.2021 - Dec.2021*
- Designed and developed core game mechanics for 5 interactive worlds with emerging AR/VR technologies.
- Honed communication and collaboration skills by working with muti-disciplinary people across diverse roles.
- Conducted playtests with internal experts and naïve players to practice on fast prototyping and effective iteration.
- Joined the teaching team as a programming TA in the next year and held 5 technical workshops to help students.

Simulation of Animal Behavioral Intelligence | *C#, Oculus Rift*   *Aug. 2019 –Sept.2021*
- Presented a simulation method of pursuit-evasion behaviors in animal groups with runtime situational awareness.
- Implemented a complete agent-based 3D hunting simulation in Unity3D and conducted intensive experiments against current algorithms to prove the validity of our methods.
- Publication: **Yu, Z**, Tan, J, Li, S. Simulation of collective pursuit-evasion behavior with runtime situational awareness. Comput Anim Virtual Worlds. 2022; 33(5):e2124. https://doi.org/10.1002/cav.2124
- Selected by the committee to receive the **CGI2022 Best Paper Award**.

Scotty 3D | *C++*   *Feb. 2022 – Apr. 2022*
- Accomplished a 3D graphics software pipeline including components for modeling, rendering, and animating.
- Constructed scene meshes using a Bounding Volume Hierarchy (BVH) to achieve efficient and robust query and accelerated the rendering process by hundreds of times.
- Implemented high-quality global illumination based on Monte Carlo path tracing, applied importance sampling to improve both performance and image quality.

SKILLS

- **Programming Languages:** C/C++, C#, Java, Python, JavaScript/TypeScript, HTML, React, SQL, Lua
- **Technology and Tools:** Unity3D, OpenGL, Tensorflow, Pytorch
- **Platforms:** Oculus Quest(VR), Hololens(AR), HTC Vive(VR), Tobii Eye Tracker, Kinect
- **Version Control:** Git, Perforce, SVN