

Radium (Lei Zhang)

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Education

Georgia Institute of Technology, Atlanta, GA

M.S. in Computer Science, Expected: May 2025

- Relevant Coursework: Human-Computer Interaction, GPU Development, Ubiquitous computing.

University of Minnesota, Twin Cities, Minneapolis, MN

B.S. in Computer Science & Mathematics, 2021

- Relevant Coursework: Data Structures, Algorithms, Database Systems, Computer Graphics, Operating Systems.

Skills

Programming Languages: C++/C, CUDA, Java, Python, Lua, Javascript, HTML/CSS, Julia, Matlab

Frameworks/Libraries: TensorFlow, PyTorch, Julia Flux, React, Vue, Flask, Node JS, Django, AWS

Game Development & Graphics: UE4, Unity3D, Godot, OpenGL, UGUI

Version Control: Git, GitHub, GitLab, SVN, Perforce

Databases: TiSpark, SQL, SQLite3, NoSQL, SQLAlchemy

Machine Learning: DNN, CNN, RNN, neural ODE, transformers

Reinforcement Learning: Policy gradients, differentiable programming, deep Q, Markov processes

Work Experience

Georgia Institute of Technology - Graduate Teaching Assistant

Atlanta, GA

2024 Spring, 2024 Fall

- Assisted in teaching CS 7632: Game AI, covering topics such as reinforcement learning, Monte Carlo Tree Search, and AI algorithms (minimax, genetic algorithms, behavior trees).

Tencent Technology (Shenzhen) Co., Ltd. - Game Developer

Shenzhen, China

June 2021–April 2023

- Spearheaded the development of Free Casonry, an award-winning independent narrative and storytelling management mobile game, completed in just 15 days.

- Designed a tool to automate UI reconstruction from Photoshop to Unity3D and Unreal Engine, streamlining the conversion process and enhancing development efficiency by 300%.

Hangzhou Tonghui Technology Co., Ltd. - SDE Intern

Hangzhou, China

Oct. 2019–May 2021

- Utilized UGUI, SQLite3, and XCharts for data visualization, improving patient management.

- Created a VR system for rehabilitation training, incorporating multi-sensory stimulation and personalized training plans based on kinematic and physiological data.

Hangzhou Yunji Co., Ltd. - HRM IT Support Intern

Hangzhou, China

June 2019–Aug. 2019

- Transformed portal system by leveraging customer behavior insights and developed an intuitive employee management UI using React to enhance user experience.

University of Minnesota, Twin Cities - Undergrad Research Assistant

Minneapolis, MN

June 2018–May 2020

- Created a communication system for interactive visual narratives in scientific visualization.

- Designed a protocol for exchanging visual narratives, focusing on flow and volume visualizations.

- Integrated the system with email platforms for seamless communication.

PingCap Inc. - SDE Intern

Beijing, China

May 2018–Aug. 2018

- Participated the development of TiSpark, a hybrid HTAP solution, significantly improving OLAP capabilities and reducing query response times.

- Spearheaded the Java implementation of TiKV-Client, enhancing interoperability across the system.

Projects

ChatGPT-Installation 🔄

- Designed and implemented a multi-step user flow and interactive gameplay, enhancing user engagement and overall experience.
- Built and managed a structured backend using Flask-SQLAlchemy for scalable database management, ensuring organized data handling.
- Developed responsive frontend pages using HTML, CSS, and JavaScript, improving accessibility and user interaction.

VR Driving Sim (Collaborative Project with Cornell Tech) 🔄

- Innovated in developing a car-drone hybrid system, implementing physics-based controls for seamless transition between modes.
- Enhanced visual fidelity through advanced post-processing techniques, integrating weather effects and holographic displays.

Audio Visualization 🔄

- Developed an audio visualization system using JavaScript, leveraging the WebAudio API for real-time audio parsing and Canvas for dynamic visual rendering.
- Applied Fourier transform and advanced sampling techniques for waveform decomposition and enhanced visualization accuracy.

Glass Material Rendering in Unity3D 🔄

- Engineered a low-cost, real-time glass rendering solution for Unity3D, incorporating MatCap textures and custom shaders for realistic reflection and refraction effects.
- Optimized the solution for real-time rendering on resource-constrained devices, addressing key computational challenges.

Memberships & Affiliations

- **Georgia Tech Graduate SWE (Society of Women Engineers)**
- Grace Hopper Celebration (GHC) 2023
- Rewriting the Code (RTC)