LIANRUI GENG

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EDUCATION

The University of Utah   **Salt Lake City, UT**
Kahlert School of Computing, Bachelor of Science Degree   08/2021-12/2024 (expected)

- Major in Computer Science, Minor in Mathematics

- Overall GPA: 3.53/4.0; Major GPA: 3.55/4.0

- Honors: Dean's List for 2023 Spring, $6000 Scholarship for 4 academic years

RESEARCH PROJECTS

Efficient GPU Screen-Space Ray Tracing   **Salt Lake City, UT**
Advisor: Prof. Yin Yang   04-05/2024

- Designed the project architecture and selected external libraries in a two-person team, created shaders for ray tracing and scene rendering, and implemented the DDA line algorithm using the GPU
- Simulated ray tracing effects by setting dynamic objects within the scene, loaded scenes and models using external libraries, and exhibited results with fixed camera angles and mirror rendering
- Built a new algorithm that reduces oversampling and missing sample issues, lowers the complexity of ray tracing calculations, and ensures continuity between sampling points to prevent visual artifacts

Graduation Project-Wrap   **Salt Lake City, UT**
Advisor: Prof. Fengjiao Wang & Prof. J. Davison de St. Germain   01-12/2024

- Led the project design and technology selection, managed the full-stack website development, employed the front-end using React and the backend with Node.js, designed the database schema with MongoDB, and deployed the application on AWS EC2 with NGINX, using PM2 for monitoring and HTTPS for secure communication

- Developed a web extension using Chrome's Manifest V3 model, integrated with NLP models from Hugging Face for summarizing legal documents, which identifies legal documents, generates summaries, and sends notifications to users to enable users to view detailed reports on the connected React-based web interface

- Achieved integration between the extension and the web application, enabling users to view historical and current reports, upload documents for report generation, and access summaries, currently working on user settings for the extension and web reports, and enhancing reports with risk assessments, section labels, and jargon dictionary

RECENT INTERNSHIP EXPERIENCE

Aureum Gale Games   **Los Angeles, CA**
Game Develop Engineer Intern (Remote)   06-08/2024

- Developed prototype for 3D game using Unreal Engine 5, creating interactive environments and mechanics through UE5 Blueprints.

- Collaborated with designers and artists to ensure seamless integration of game assets and design features.

- Gained experience working with version control tools like Git for managing code and assets across a development team.

Heilongjiang Guanjie Biotechnology Co., Ltd   **Harbin, China**
Remote Site Maintenance / web developer   04-08/2024

- Developed and maintained responsive websites using HTML, CSS, and JavaScript to enhance user experience and functionality.

- Collaborated with team remotely using tools such as Git and Slack to keep coordination with teammates

- Implemented new features and fixed bugs based on user feedback to ensure stable increase in website performance and user satisfaction

TECHNICAL SKILLS

- Programming Language: Java | C# | C++ | C | JavaScript | SQL | HTML | CSS | Python | MATLAB

- Frameworks / Tools: Git | MySQL | MongoDB | AWS | Docker | Qt | Processing, other programming IDE

- Web Development: Node.js | React | MUI | Django | axios | express.js | mongoose | bcryptjs | Flask