
LANCER GUO

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PROFESSIONAL SUMMARY

Experienced software developer well-versed in Java, C#, and C++, with a proven track record in game and software development. Particularly passionate about and proficient in the realms of computer graphics, rendering, and appearance models. Consistently staying ahead with emerging technologies, while maintaining a strong commitment to producing structured, reusable, and adaptable code.

EDUCATION

Master of Science: Computer Science, Expected in 10/2023

McGill University - Montreal, QC

- 4.0 GPA
- Thesis Paper: Appearance Filtering for High-frequency Normal Mapped Layered Materials - supervised by Derek Nowrouzezahrai

Bachelor of Science: Computer Science, 09/2020

McGill University - Montreal, QC

- 3.67 GPA
- Associate programmer, McGill Game Dev Club, 2019 to 2020

SKILLS

- CS Language
 - Research and complex problem-solving
- Java, C++, C#, Python, HTML / CSS / JavaScript,
PostgreSQL
- Collaborative programming and planning
 - Bilingual in Chinese and English, novice in French
- Software
- Unity, Unreal Engine, Maya/Blender, Version control,
Mitsuba, Gimp

WORK HISTORY

Teaching Assistant, 09/2020 - 04/2023

McGill University – Montreal, QC

- Assisted in algorithm, software design, and computer graphics courses for exam grading and tutorials.
- Designed and programmed course assignments and projects and provided beginner code and detailed instructions.
- Led group discussions of 20+ students weekly about algorithms and design patterns, held tutorials and mock interviews to help students with their programming skills.

Computer Graphics Researcher, 10/2021 - 03/2022

Huawei Technologies – Montreal, QC

- Researched on a multi-view material reconstruction model using differentiable rendering in Python and C++.
- Collaborated with the AI team to construct datasets and research different loss function strategies for performance improvement.
- Successfully reconstructed the SVBRDF of 3D objects using less than 100 images with admirable accuracy.

Game Programmer, 05/2020 - 08/2020

Tencent Technology – Montreal, QC

- Worked with software development and testing team members to design and develop profiler tools to provide front-end game programmers with better efficiency.
- Implemented and tested features using Unreal Engine.

Web Developer, 09/2019 - 08/2020

McGill University – Montreal, QC

- Coded using HTML, CSS, JavaScript, and PHP to develop features on the server and maintain websites.
- Produced websites and blogs for scientific publicity.

PROJECTS

Renderer, 2021

- An offline renderer built in C++ for my own research purposes.
- Implemented ray/path tracing algorithms with various BRDF models, lighting models, and texture mapping.

[Tencent Game Project](#), 2021

- Developed a 2D/3D game about Chinese traditional architecture with an educational purpose, with two artists and a designer.
- Implemented the complete game loop, as well as gameplay, UI, graphics, and animation in Unity Engine.

[The Ubisoft Game Lab Competition](#), 2020

- Participated in the competition as the team leader/programmer with six other teammates and worked on a 3D level-based action game.
- Designed, programmed, and tested AI using Unreal Engine, utilizing classic AI behavior patterns for low-level action and decision trees for high-level planning.
- Collaborated with designer and artist to incorporate texture and animation into the prototype.

Research project: Modelling of Sound Propagation in Video Game, 2019

- Developed an innovative sound propagation model for video games, enhancing player immersion by accurately simulating audio interactions within virtual environments.
- Accepted by the symposium UCORE 2019, presented my result in an open poster session.