Jinhyeong (Jinnie) Kim

Year 4, Mathematics Major | 604-725-3652 | LinkedIn | GitHub | jinhgkim@gmail.com

TECHNICAL SKILLS

Language: C#, C++, Java, Python
Other: Unity, DX11, Azure, Cloud Firestore, Autodesk Maya, Git, MATLAB, Global Mapper

EDUCATION & AWARDS

BSc in Mathematics, University of British Columbia, Vancouver, Year 4 Sep 2021 – May 2025

- Dean's List 2021-2022, GPA: 4.00/4.33

Faculty of Science International Student Scholarship Dec 2022

- Awarded in recognition of strong academic achievement, engagement in the Faculty, and the potential to make a scholarly contribution within the chosen field of study

EXPERIENCE

3D Visualization Developer Co-op | BGC Engineering Inc., Vancouver, BC Jan 2023 – Aug 2023

- Implemented a 4-way **Flood Fill algorithm** using BFS algorithm and optimized it by employing Burst Compile Job, lower level of POD and debugging with Deep Profile Tool for memory management in Unity C#, resulting in 400 times increase in speed
- Improved visualization of DEM difference by asynchronously caching full resolution PNG data using Unity API while streaming tiles
- Developed a new architecture for **point cloud generation** with continuous level of detail
- Implemented a csv file importer to create instrument metadata ScriptableObjects
- Worked on UI using Unity UI toolkit and applied MVP design pattern, worked on the back-end using Cloud Firestore and Azure blob storage

Undergraduate Teaching Assistant | University of British Columbia Sep 2022 – Dec 2022

- Assisted an instructor with 50+ students in **MATH100: Differential Calculus with Applications**
- Graded 26 group assignments biweekly and provided feedback and guidance to the students
- Helped 150+ students with the in-class exercises and answered the questions

PERSONAL PROJECTS

Path Tracer Aug 2022 – Sep 2022

- Implemented a Path Tracer in C++ that renders 3D scenes at Visual Studio
- Applied 3D mathematical concepts such as vector, dot product, and cross product
- Included features such as camera positioning, lighting, and anti-aliasing
- Used Git and GitHub to keep track of the progress of the project

Rocket Launch Animation | https://vimeo.com/746756607 Aug 2022 – Sep 2022

- Made a 10-second animation at 24 fps with Autodesk Maya
- Created the rocket fins more efficiently by using the deformation function on the cube
- Made the rocket more realistic by adding noise on the surface when lighting and shading

CORE COURSES

CS | Computer Graphics, Basic Algorithms and Data Structures, Software Construction
MATH | Classical Differential Geometry, Vector Calculus, Multivariable Calculus, Applied Linear Algebra