Jinhyeong(Jinnie) Kim

Year 4, Mathematics Major

604-725-3652 jinhgkim@gmail.com LinkedIn GitHub JK-website

Technical Skills

Languages: C#, C++, Java, Python, HTML/CSS, JavaScript, SQL
Other: Unity, DX11, Azure, Cloud Firestore, Autodesk Maya, Git, MATLAB, Global Mapper, Visual Studio, VS Code

Education & Awards

BSc in Mathematics | University of British Columbia **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 **Jan 2023 – Aug 2023**

BGC Engineering Inc. *Vancouver, BC*

- 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 **Sep 2022 – Dec 2022**

University of British Columbia *Vancouver, BC*

- 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

Projects

Fluid Simulation | *C#, Unity* **Sep 2023 – Present**

- A fluid dynamics simulator inspired by Jos Stam's paper Real-Time Fluid Dynamics for Games

Stash (Mobile Banking App) **Sep 2023 – Present**

- A mobile banking app that allows splitting the expenses among friends easier and more efficient

Path Tracer | *C++* **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 | *Autodesk Maya* **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: Differential Geometry, Vector/Multivariable Calculus, Applied Linear Algebra, Linear Programming, PDE