Joshua Jiehua Chasnov

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https://github.com/jjc914

Education

University of California, Davis *Bachelor of Science in Computer Science and Engineering*
Expected graduation in June 2027
- **Relevant expected coursework:** (Math) Calculus, Vector Analysis, Linear Algebra, (Computer Science) Programming & Problem Solving, Software Development & Object-Oriented Programming in C++, Data Structures, Algorithms, & Programming

Chinese International School *High School Diploma, International Baccalaureate (IB) Diploma*
August 2021 - May 2023
- **IB final score:** 43 / 45
- **Honors:** Computer Science subject award (2022, 2023), Head's Commendation (2021-2023, transcript greater than 90%)

Work Experience

City Gal Transportation | City Gal Transportation, Minnesota, United States *Full Stack Developer*
July 2023 - Present 🔗 https://city-gal-transportation.vercel.app
- Designed and developed the company website using plain HTML, CSS, and JavaScript
- Communicated requirements and restrictions effectively with the project manager which improved my ability to work within guidelines and communicate ideas

Metarenderer | Hong Kong University of Science and Technology, Kowloon, Hong Kong *Graphics Programmer*
June 2022 - October 2022 🔗 https://github.com/zymk9/Metarenderer/tree/jjc914
- Implemented lighting and shadowing techniques on the GPU i.e. Blinn-Phong reflection, Toon shading, shadow mapping, screen-space ambient occlusion under the guidance of Professor Pedro Sander using GLSL and Three.js
- Developed custom shadow volume rendering algorithm using geometry extrusion and stencil buffers, implemented into Professor Sander's render pipeline teaching tool

Coursera "Numerical Methods for Engineers" | Hong Kong University of Science and Technology, Kowloon, Hong Kong *Video Editor*
June 2021 - August 2021 🔗 https://www.coursera.org/learn/numerical-methods-engineers
- Filmed 200 minutes of green-screen footage for the course's video modules
- Edited 20 lectures using Davinci Resolve into Coursera video modules which has been used by 185,000 students, rated 4.9/5

Notable Projects

Ludum Dare / Brackeys Game Jams
April 2018 - Present 🔗 https://joshuc.itch.io </> C# / Unity
- Competed solo once and as a group 7 times, led a group of artists, musicians, and programmers as the project manager
- Achieved 96th percentile in graphics and 86th percentile overall working solo under a strict time constraint of 48 hours
- Achieved 98th percentile in innovation and 91st percentile overall as a group under a strict time constraint of 168 hours

GPU Path Tracing Shader
August 2023 - Present 🔗 https://www.shadertoy.com/view/dllfWH </> GLSL / ShaderToy
- Programmed A GPU-accelerated ray marched path tracer to learn the fundamentals of modern real-time rendering

Shader Post-Processing Effects
January 2023 - September 2023 🔗 https://github.com/jjc914/bonfire </> C#, HLSL / Unity
- Extended Unity's render pipeline that allows for custom post-processing effects
- Implemented Sobel filtering, pixelation filtering, and toon shading to design stylized renders

Terminal Rasterization Engine
November 2022 - December 2022 🔗 https://github.com/jjc914/jbrender </> C
- Wrote over 1300 lines of code to develop a rasterization engine that renders to the Unix shell
- Implemented a custom linear algebra library, OBJ reader, and threaded keyboard listener

Technical Skills

Programming Languages
Python, C, C++, C#, Java, HTML, CSS, JavaScript, PHP, SQL, GLSL, HLSL, Swift, LaTeX, CMake

Programming Tools
Git, Unity, Google Cloud Platform, MySQL, Android Studio, Regex

Other Tools
Blender, Final Cut Pro, Davinci Resolve, Logic Pro, Inkscape

Spoken Languages
English (fluent), Mandarin (proficient), Cantonese (intermediate)