

Emmett Kapsner

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EDUCATION

University of Minnesota, College of Science and Engineering

Minneapolis, MN

Bachelor of Science, Computer Science

German Minor

May 2024

GPA: 3.5

SKILLS

Technical Skills: Proficient in C, C++, Java, Python and OCaml; Experience with Typescript, GLSL, and C#

Language: Conversational Proficiency in German

PROJECTS

VR Spellcasting Input System

November 2023 – December 2023

- Enables user to enter commands by intuitively drawing shapes in 3D space using the Godot engine
- Uses particle systems to provide immediate feedback to user

2D Rigid Body Simulation

November 2023 – December 2023

- Created a 2D rigid body simulation system from scratch using Processing, incorporating rotational dynamics and collision detection
- Implemented the Separating Axis Theorem (SAT) to accurately detect collisions between convex shapes, enabling realistic interactions between objects

GLSL Dithering Shader

November 2023

- Designed and implemented a custom dithering shader in GLSL to convert images to grayscale using only black and white pixels
- Optimized shader performance to ensure real-time rendering of dithered images in interactive applications

Ray Tracer

January 2023 – March 2023

- Developed a ray tracer from scratch in C, implementing advanced rendering techniques without relying on external libraries
- Implemented a variation of the Blinn-Phong reflection model to simulate realistic lighting effects, including specular highlights and diffuse shading

WORK EXPERIENCE

University of Minnesota, Office of Classroom Management

Minneapolis, MN

Classroom Technology Monitor Lead

September 2022 – Present

- Test and service complex technical systems to minimize downtime
- Coordinate tasks with coworkers to ensure timely resolution of mechanical/technical issues
- Organize and maintain departmental inventory to allow for system upgrades and repairs
- Train and explain the essential technical nuances to new team members
- Suggest and implement changes in classroom system layout to improve user experience

University of Minnesota, Department of German, Nordic, Slavic, and Dutch

Minneapolis, MN

Volunteer German Language Tutor

January 2024 – May 2024

- Facilitated conversational practice to enhance students' speaking and listening skills in German
- Assisted students in understanding complex grammar rules, sentence structure, and vocabulary usage
- Provided personalized tutoring sessions to university students seeking assistance in German language acquisition
- Demonstrated strong communication and interpersonal skills in building rapport with students and promoting their confidence in using the German language