

# Cameron VanderTuig

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## WORK EXPERIENCE

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### Spatialization Lab at Qualcomm Institute - University of California, San Diego.

La Jolla, CA

*Applications Programmer*

August 2022 - July 2024

- Built Unity and Unreal Engine demos showcasing the lab's audio spatialization algorithm Space3D.
- Updated our custom Unreal Engine build that allows more than 8 channels of audio out.
- Setup networking (Including AVB network bridging between labs and IT administration).
- Captured volumetric visual performances using Brekel V3 to complement audio captures.
- Built Rust tools for managing and interacting with lab equipment, mainly Dante devices.
- Implemented Vulkan as a substitute for OpenGL for rendering ray tracing paths in our Spatialization algorithm Space3D.
- Built a VST plugin so that Space3D can be used in DAWs.

### Schwartz Center for Computational Neuroscience at University of California, San Diego

La Jolla, CA

*Unity Game Developer*

April 2023 - June 2023

- Worked on developing the game Metro, which will be used for research investigating the applications of human-AI teaming for problem solving tasks.
- Refactored existing code so that multiple games could be played simultaneously.
- Updated the external AI-oriented API so that training and testing the AI was easier and more efficient.

## EDUCATION

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### Duke University

Durham, NC

*Game Design, Development & Innovation Masters Program*

2024 - 2026

### University of California - San Diego

La Jolla, CA

*Bachelor of Science: Cognitive Science with Specialization in Machine Learning and Neural Computation*

2019 - 2023

*Minor: Interdisciplinary Computing and the Arts Computer Music and Music Technology*

GPA:3.47

- **Relevant Coursework:** Calc based Prob. & Stats, Calc & Analytical Geometry for Scientists and Engineers, Intro to Python, Linear Algebra, Intro to Statistical Analysis, Intro to Probability, Vector Calculus, Data Science in Practice, Accel. Intro to Programming, Musical Acoustics, Intro to Machine Learning II, Computer Music I, Musical Psychoacoustics, Computer Music II, Supervised Machine Learning Algorithms, Electronic Music Prod & Comp, Audio & MIDI Studio Techniques I, II, III

### Choate Rosemary Hall

Wallingford, CT

*High School Diploma*

2017 - 2019

- **Relevant Coursework:** Mathematics: AP Calc AB, AP Calc BC, Linear Algebra, Game Theory, Multivariable Calc. Computer Science: AP Comp Science w/ Java, C++ Programming, A+ IT Essentials (Cisco)

## SKILLS & INTERESTS

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**Proficient In:** C, C++, C#, Python, Rust, Unreal Engine (C++ & BP Interaction, Replication, Gameplay Ability System) Unity, Wwise, Git, Perforce, Ableton Live & FL Studio, Blender

**Familiar With:** Javascript, Vulkan, VST SDK & JUCE

**Interests:** Video Games, Programming, Manga, Virtual Reality, Music (Mainly production), Tennis, TTRPGs