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## EDUCATION

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B.S. Computer Science | University of Oregon

Graduating Jun 2023

- Music Minor; UO Excellence Scholarship; Dean's List

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## EXPERIENCE

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CDUX Research Group | Undergraduate Research Assistant

Jun 2021 - Jun 2022

- Worked to apply computer graphics techniques to extreme-scale scientific visualization in C++
- Helped in implementing a physically-based rendering shader and texture-mapping functionality to VTK-m

Associated Students at University of Oregon | Senator

Mar 2020 - present

- Responsible for the allocation of a \$17.5 million annual fund for programs, events, and at the University
- Led a project that successfully updated the Dean's List policy for the University

University of Oregon | Undergraduate Teaching Assistant

Sep 2020 - Sep 2021

- Taught object-oriented and functional programming in Python; led coding exercises with a group of 10 first-year students weekly
- Held weekly office hours and reviewed their coding projects

On the Rocks A Cappella Group | Music Director

Feb 2020 - present

- Coordinating gigs, recording time, and engineering for published music; arranging, teaching music to, and directing a group of 14 singers
- Forming and maintaining connections with local businesses and schools, clients, industry professionals

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## PROJECTS

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GitHub | <https://github.com/raulpatel>

Portfolio Website | [raulpatel.github.io](http://raulpatel.github.io)

Sep 2022

- Javascript, HTML, CSS; Vanilla JS website with dual portfolio for Software Engineering and Music

Classic EQ Plugin

Nov 2022

- C++, JUCE; Using JUCE and DSP concepts to create a 4 band EQ plugin with a low and high shelf, as well as two peak bands. Available for download in both AU and VST3 from my GitHub/portfolio website.

Parallel Cellular Automata API

Nov 2021

- C++, OpenMP; Group project creating an API from scratch with 3 cellular automata simulations: Game of Life, rudimentary Forest Fire Simulation, rudimentary Flocking Simulation. Parallelized and run on HPC system to show speedup.

Image Rasterizer

Apr 2021

- C++, VTK; A software-based computer graphics system that renders imagery via rasterization, including Phong shading, hidden surface removal, and arbitrary camera positions with the CPU.

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## SKILLS

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Programming Languages

- C++, C, Python, Javascript, HTML, CSS

Related Experience

- Git, Unix, Bash, JUCE, React, Node.js, OpenGL, OpenMP, Docker, Unix, macOS

Development Environments

- Vim, VSCode, JetBrains IDEs, IDLE, Xcode, Atom, Sublime

Relevant Coursework

- Audio Effects Theory and Design; Computer Graphics; Scientific Visualization; Parallel Computing; Data Structures & Algorithms; Operating Systems; Software Engineering; Principles of Programming Languages;

Interests

- Music Production and Engineering; Guitars and Repair; Cooking; Traveling (38 countries and counting); Spanish;