

Ollie Arrison

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EDUCATION

Carnegie Mellon University

Bachelor of Science in Computer Science

Concentration in Computer Graphics; Cumulative GPA: 3.57/4.0

Relevant Coursework: Visual Computing Systems, Computer Graphics, Physics-Based Rendering, Computer Systems, Parallel and Sequential Data Structures and Algorithms

Pittsburgh, PA

Expected May 2026

WORK EXPERIENCE

Augmented Perception Lab

Undergraduate Researcher

- Design and implement novel XR interfaces using physics simulations in Unity under Prof. David Lindlbauer.

Pittsburgh, PA

08/2025 - Present

Fundamentals of Programming and Computer Science

Teaching Assistant

- Led weekly recitations of ≈ 25 students, incorporating live Python coding demonstrations to reinforce core concepts.
- Mentored 8 students on planning and building term projects emphasizing code structure and creative problem-solving.
- Graded assignments with detailed feedback, improving comprehension and coding proficiency.

Pittsburgh, PA

01/2023 - 05/2023, 06/2024 - 08/2024

PROJECTS

C++ Spectral Path Tracer

- Built a spectral renderer in C++ with hero wavelength sampling, volumetric rendering, and data-driven BRDFs.
- Earned 1st place in 3 Physics-Based Rendering class competitions and runner-up in 1 for polished renders of original scenes.

01/2025 - 05/2025

C++ Computer Graphics Pipeline

- Constructed a modular graphics pipeline in C++ with rasterizer, geometric editing tools, path tracer, character rigging system, and particle system animation.
- Awarded 1st place in the Computer Graphics class showcase (≈ 70 students) for novel features including additive image planes to produce glowing effects and combining Perlin noise perturbed normals with reflective material to simulate water.

09/2024 - 12/2024

Hybrid Animation Application - <https://github.com/ollicarrison/SURA>

- Designed a novel 2D/3D hybrid animation tool using JavaScript, Vue, CSS/HTML, and Three.js as part of the Summer Undergraduate Research Apprenticeship under Prof. Nancy Pollard.
- Created algorithms leveraging camera pathing and 2D canvas projections onto 3D space, reducing frames required for convincing animation and lowering the barrier of 3D art creation.

05/2023 - 08/2023

Procreate112 - <https://github.com/ollicarrison/112-project>

- Built a Procreate-inspired digital art application in Python with support for brushes, erasing, color selection, layers, and more.
- Earned 1st Place in Fundamentals of Programming showcase (≈ 500 students); developed live brush-stroke preview and polished OOP-based UI, recognized as the most complete painting tool in class history.

05/2023 - 08/2023

SKILLS

Programming: Python, C++, C, C#, JavaScript, SML, Dart

Frameworks & Tools: Unity, Three.js, Vue.js, HTML/CSS

ACTIVITIES

President, Masters of Flying Objects

- Expanded CMU's juggling club by organizing events, training sessions, and community outreach.

09/2024 - Present

Digital Art & 3D Modeling

- Proficient in Blender and Procreate; artwork showcased annually in the CMU SCS Art Gallery.