

AIDEN WOODRUFF

Troy, NY 12180 | aiden@aidenw.net | www.aidenw.net/portfolio

EDUCATION

Rensselaer Polytechnic Institute (RPI)

Bachelor of Science, Computer Science, Music Minor, Magna Cum Laude
Master of Science, Computer Science

Troy, NY
May 2025
Expected May 2026

RELEVANT COURSEWORK

Probability Theory and Applications	Intro to Algorithms	Finite Element Method
Computational Ecological Modeling	FEM for Fluid Dynamics	Linear Algebra
Distributed Systems and Algorithms	Parallel Programming	Data Structures

SOFTWARE SKILLS

Programming languages C, C++, Python, Go, HTML, CSS, JavaScript, \LaTeX , SQL, AWK, Bash

Applications Git, CMake, GDB, Valgrind, ParaView, TotalView, Docker, Vim, Siemens NX, Ansys Fluent

WORK EXPERIENCE

Scientific Computation Research Center (SCOREC)

Graduate researcher

Undergraduate researcher

- Developed robust shock detection and processing methods
- Developed shock geometry based meshing techniques
- Performed parallel scaling studies
- Presented work at conferences

RPI, Troy, NY
May 2025-Present
Sep 2023-May 2025

RPI School of Science

Field Researcher

- Collected and identified macroinvertebrate samples in the Poesten Kill, NY

Undergraduate researcher

- Researched thermal optimal temperatures for fish species in Lake George, NY
- Presented a poster at RPI SoS undergraduate research symposium

Troy, NY
May 2023-Aug 2023

Jan 2023-Apr 2023

Capital Cruises

Captain

- Narrated tours while navigating Lady Bird Lake
- Delivered boating safety presentations

Austin, TX
Mar 2021-Aug 2022

Communications and Technology Management

CTM Intern

- Produced tours, artwork visualizations aids, and new website for Art in Public Places department

Austin, TX
Jun-Jul 2019

RESEARCH

Towards Automatic Construction of 3D Shock-fitted Meshes based on Robust Shock Detection and Processing AIAA SciTech 2026
Presenter

Aiden Woodruff and Onkar Sahni

Graphs, AI/ML and Adaptivity-based Meshing for Accurate Prediction of Surface Heating in Hypersonic Flow Problems USNCCM 2025
Presenter

Aiden Woodruff, Sharat Val, Mikiel Gica, Arshad Chowdhury, and Onkar Sahni

Robust and Automatic Shock Detection and Processing in High-Speed Flow Simulations AIAA SciTech 2025
Presenter

Aiden Woodruff and Onkar Sahni

In-Memory Anisotropic Mesh Adaptation for Hypersonic Problems With Evolving Geometry

Mikiel Gica, Aiden Woodruff, Cameron Brown, Giovanni Salazar, and Onkar Sahni

AIAA SciTech 2025
Co-author

AI/ML-Assisted Robust Shock Processing for CFD Applications

Onkar Sahni, Sharat Val, Aiden Woodruff, and Arshad Chowdhury

AIAA SciTech 2025
Co-author

HONORS

Class of 1902 Research Prize

RPI's 219th Commencement (2025)

ACTIVITIES

RPI Rugby Forward

Treasurer

Executive secretary

Field manager

Sep 2022-Dec 2025

Dec 2023-Dec 2025

Dec 2022-Dec 2023

Dec 2022-Dec 2023

RPI Concert Choir Bass

Nov 2022-Present