

AIDEN L. ZURCHER

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Summary

Materials science engineer with specialty in advanced materials and novel nuclear reactor design. Integrates a global and economic perspective with experiences in radiation embrittlement, corrosion analysis and additive manufacturing.

Education

KAIST, Daejeon, South Korea Semester abroad February-July 2025

· Designed novel molten salt reactor fuel and studied integrity of nuclear structural materials.

University of Pittsburgh Swanson School of Engineering, Pittsburgh, PA August 2022-April 2026

· Honors Degree, BSE in materials science, with economics minor and nuclear engineering certificate.

· GPA: 3.65, Dean's List every semester.

Thomas Jefferson High School for Science and Technology, Alexandria, VA Graduation: June 2022

AP Scholar with Distinction, GPA: 4.17

Skills

Technical Tools: Java, Python, C, MATLAB, CAD, Arduino, Minitab, ANSYS, MOOSE

Experimental Skills: Metallography, tensile testing, binder jet printing

Analysis: Statistical modeling, materials characterization and selection, mechanical property evaluation

Experiences

Korea Advanced Institute of Science and Technology, Daejeon, South Korea

Research Assistant April 2025-July 2025

· Co-authored and presented paper with international team on irradiation embrittlement of Linde80 welds.

· Established connections between professors at KAIST and Pitt in additive manufacturing research.

University of Pittsburgh Swanson School of Engineering Student Undergraduate Research Internship

Intern May 2024-August 2024

· Authored scientific paper on binder-jet printing of Zircaloy-4, based on experiments extending Westinghouse research.

· Troubleshooted and improved custom binder jet printer by rewriting code in C and installing it into a glovebox for printing in an argon environment.

Materials, Soils and Testing Division, WV Department of Highways, Charleston, West Virginia

Co-op May 2023-August 2023

· Conducted quality assurance testing in aggregate, concrete, metal, asphalt, and pavement labs.

· Deployed statistical models to process experiment data and assess compliance with ASTM and AASHTO standards for structural materials.

Whitespace Solutions, Alexandria, Virginia

Intern June 2019-August 2019

· Gained early-stage company experience by researching, testing and demonstrating AR technology to clients.

Campus Involvement

Sailing Club at Pitt, Pittsburgh, Pennsylvania

Member, Vice President, President April 2022-Present

· Led 20+ members, grew the club by 40%, and organized intercollegiate regattas.

Theta Tau Co-ed Engineering Professional Fraternity, Nu Delta Chapter, Pittsburgh, Pennsylvania

Member January 2024-Present

· Coordinated outreach and volunteer initiatives through Theta Tau, contributing 30+ service hours.

Projects

Heat Exchanger Insulation Design for eVinci Microreactor

· Six-person team design project sponsored by Westinghouse simulating insulation designs for the Westinghouse microreactor using Ansys Fluent and narrowing down material choice using Ansys Granta.

Independent Research Project on Laser-facilitated Carbon Nanotube Growth on Stainless Steel

· Authored paper on increasing oxide layer via a green pulsed laser to improve growth of carbon nanotubes.

· Gain experience operating delicate laboratory equipment such as pulsed laser and chemical vapor deposition reactors.