

Nate Westfall

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EDUCATION

Worcester Polytechnic Institute (WPI), Worcester, MA
Bachelor of Science in Computer Science, GPA 3.93/4.00, May 2025

Dartmouth High School (DHS), Dartmouth, MA
High School Diploma, June 2021

SKILLS

Programming Languages: Rust, C#, C++, Svelte, SQL, CSS, HTML, JavaScript, React, Python, Java, Cycling 74
Max, Racket, x86 Assembly

Software: Visual Studio Code, Git, SolidWorks, MySQL, Oracle DB, Linux, Visual Studio 2022, ArcGIS, Microsoft Office, Unity, Virtual Box, Onshape, MuseScore, Ableton

Instruments: Violin, Piano

PROJECTS

Evaluating the Enlightenment Gallery (IQP), British Museum, London, England Spring 2024

- Helped the prestigious British Museum's goal to track visitor patterns to improve the displays.
- I created a web app that allowed us to draw visitor paths on a top-down map of the room.
- I made a program in Python to analyze the data and to create graphs, charts, and heatmaps.
- We wrote a report and presented the results and programs to the museum.

Creating Algorithmic Music (Humanities Practicum), WPI Spring 2024

- Created a program in C++ and CUDA to create new sound using granular synthesis.
- My algorithm sends batches of short clips of sound to my GPU to then compare against millions of clips of other sounds in parallel to find the deterministic replacement that is minimally different.

Webware, WPI Spring 2024

- Created an accessible, user-friendly Guess Who game where the cards are either Pokemon or Minecraft Items using web technologies, Svelte, and a NodeJS backend.

Artificial Intelligence for Interactive Media and Games, WPI Fall 2023

- Worked with one of the original developers of a foddian platformer (Cantaloper on Steam) to add a self-generating level based on Markov chains.
- I added a physics-based jetpack to allow the player to get through the harder transitions.

Introductions to GIS, WPI Spring 2022

- Evaluated the impact of light pollution on optical telescopes in Europe using ArcGIS by calculating the mean light pollution in a radius around each telescope.

WORK EXPERIENCE

Web designer, Gotta Have It Inc, 324 Huttleston Ave, Fairhaven, MA Summer 2023, 2024

- Evaluated online vendor options, ultimately choosing Shopify based on the company budget and size.
- Created new online store in Shopify, focusing on high SEO (Search Engine Optimization).
- Designed a program to automatically download product pictures using a manifest file, remove the background using alpha channel threshold, and make the images square to compliment the website.

Intern, YMCA Southcoast, 128 Union Street, Suite 304, New Bedford, MA June 2022 – August 2022

- Maximized the use of Blackbaud fundraising software.
- Created a program to generate html code to add sponsor logos to signup forms.

Volunteer, Full Plate Project, YMCA, Dartmouth, MA June 2021 – Present

- Assists with packing and distribution of food to combat hunger.

AWARDS & CERTIFICATION

Dean's List, WPI, 2021, 2022, 2023, 2024

Certified SOLIDWORKS Associate in Mechanical Design, WPI, 2023

Departmental Award for Excellence in Computer Science, DHS, 2021