

# Anthony Alvarez

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## EDUCATION

**Northwestern University**, Evanston, IL  
Bachelor of Science in Computer Science  
Honors: Quest Bridge Scholar  
Relevant Courses: Scalable Software Architectures, Computer Networking, Machine Learning.

Expected Graduation: June 2026  
GPA: 3.97/4.00

## EXPERIENCE

**DeYoung Solutions**, Web Developer (Part-Time), Kalamazoo, MI May-August 2022, May-September 2023

- Developed the user interface of a client portal for a drug testing laboratory with C# and Blazor pages.
- Created several pages to allow users to create, update, read, and delete data using ASP.NET.
- Implemented an interface to manage both a legacy database and a new database at the same time.

**Henry Crown Sports Pavilion**, Customer Service Representative, Evanston, IL September 2022-May 2023

- Enforced gym safety rules and maintained the gym in an orderly state.
- Provided customer service by assisting gym members with booking tennis court reservations and renting equipment.

## ACTIVITIES

**Northwestern University Robotics Club** September 2022-Present

- Engineered and built a 5lb radio controlled mini bot to fight with a 30lb combat robot in Norwalk Havoc Robot League (NHRL) tournaments.
- Designed and constructed (either 3D printed or machined) parts for use in combat robots.
- Competed in combat robotics competitions along with the combat robotics club and fixed robots in between fights, resulting in qualification for the NHRL world Championships in November 2023.

## PROJECTS

**Cloud Based Image Filters--Scalable Software Architectures Final Project** | Python, AWS, MySQL

- Utilized AWS Lambda to build a REST API for uploading, storing, and manipulating images on the cloud.
- Operated AWS RDS with a MySQL database to track users and their images; used AWS S3 to store the images themselves.
- Leveraged OpenCV and NumPy to create several image filters and manipulations such as edge detection, and blurring.

**Of Mice and Frogs--Game Design and Development Studio Final Project** | C#, Unity Game Engine

- Collaborated with 3 teammates to create a rogue-like game featuring a mouse that uses a yo-yo to attack frogs.
- Implemented the player controller and the yo-yo mechanic to provide fast paced and responsive player experience.
- Devised a map generation and scene management system, that lets the player travel through a randomly organized set of rooms and handles transferring player statistics and inventory across rooms.
- Conducted playtesting sessions to find out what was the best way to satisfy the play testers' feedback and the team's vision for the game.

**Trip Planning API--Data Structures Final Project** | DSSL2, Racket

- Implemented an API to process road and establishment data, to plan routes, and to locate establishments of certain categories near a given location using a variety of data structures (heap priority queue, hash tables, etc).
- Programmed implementations of several data structures such as a dictionary and a priority queue from scratch in DSSL2).

**Cane Pack-Design Thinking and Communication Project**

- Collaborated with a team of three other members to design, build, and pitch a device to allow patients with hemiplegia to carry small items on a cane for the Shirley Ryan Ability Lab.
- The prototype consisted of a block with a little bag and a water bottle holder attached to a cane via hose clamps.

**CodeDay Labs Summer Program** | Python, Flask

- Developed a simple web-based card game in collaboration with two teammates with Python and Flask.
- Programmed game logic in Python as well as real time cross-game communication with Socket.IO.
- Only beginner track team recognized by CodeDay Labs and featured on the CodeDay blog for outstanding project work.

## SKILLS

Programing languages and frameworks: Python, C#, C++, ASP.NET, Flask, Java, MATLAB.

Software/Tools: Visual Studio, Unity Game Engine, Linux, SolidWorks.

Foreign Languages: Spanish.

Interests: Cycling, Video Games.