Alex Pham

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EDUCATION

West Chester University | West Chester, PA
GPA: 3.97
B.S. in Computer Science | August 2022 - December 2025
Accelerated M.S. in Computer Science | January 2026 - December 2026

TECHNICAL SKILLS

Programming Languages: Java, Python, C#, C++, Rust, Javascript, Typescript, SQL
Libraries: Pytorch, Tensorflow, Pandas, Scikit-learn, Tailwind, React, Express
Operating Systems: Windows 10/11

PROFESSIONAL EXPERIENCE

Computer Science Researcher | West Chester University | West Chester, PA **January 2025 - Present**

- Worked with a professor and another student to develop an app to translate from Sign Language to English and vice versa.
- Created and trained a machine learning model to parse a video of German Sign Language into an English sentence using Pytorch.
- Presented a prototype at West Chester University's poster conference and to the Dean of Computer Science and Mathematics.
- Co-authored and published a peer-reviewed paper in an MDPI journal.

Computer Science Tutor | West Chester University | West Chester, PA **January 2025 - Present**

- Worked as a tutor for West Chester University's Learning and Resource Center and Computer Science department.
- Guided college students through various academic challenges and taught them necessary skills and strategies.

Programming Contest Judge | West Chester University | West Chester, PA **January 2024 - Present**

- Worked with a team to create sets of programming problems for West Chester University's programming contest.
- Organized and set up crucial software for the contest, such as presentations, computers, and IDEs.
- Guided competitors that came across any issues with the software to ensure that these problems do not significantly hinder their performance during the contest.

Game Development Counselor | ICamp | West Chester, PA **June 2023**

- Taught over 30 high school students the fundamentals of Construct 3, a beginner-friendly visual scripting-based game engine.
- Coordinated with a team of counselors specialized in different fields, such as Film and Audio, to create the best learning experience for the campers.

LEADERSHIP EXPERIENCE

Computer Science Club Vice-President | West Chester University **July 2024 - Present**

- Coordinated and managed various activities in the club with other members.
- Mentored students through different activities such as robotics, 3D modeling, and programming.
- Led club promotion and member recruitment through various events on campus, as well as through online promotion.

Game Development Club President | West Chester University **Oct 2023 - Present**

- Planned weekly meetings for the club, each spanning a diverse range of topics such as music and audio production, game design, and creation of game assets.
- Collaborated with individuals of various talents and experience levels to produce polished and entertaining projects.

PROJECTS

Atorus Research Code Review Tool **January - May 2025**

- Collaborated with Atorus Research to develop a VS-Code extension that highlights compliance violations in R code.
- Added the ability to enable/disable various rules via the VS-Code sidebar.
- Created a custom language server using VS-Code Language Server and Extension API to send error/warning messages to the editor in real time.
- Used custom parser and lexer generated by ANTLR-4 to decipher R programming language code.

Exercise Activity Recognition **April 2025**

- Used gyroscope and accelerometer data to classify the current exercise the user is performing.
- Can classify 3 different movements: bicep curls, overhead presses, and lateral raises.
- Used Tensorflow to create and train a 1D convolutional neural network on a custom database generated by Arduino code.
- Used Tensorflow Lite Micro to load the classification model onto an Arduino Nano.
- Created a custom website using React.js, Express.js, and Socket.io to display current exercise as well as other information such as the amount of repetitions and probability distribution.

Ph: Convolutional Neural Network from Scratch **January 2025**

- Created a convolutional neural network from scratch using only Python, Numpy, and Scipy.
- Created different layer types such as convolutional, max pooling, and dense layers that are automatically connected to each other once passed into the model object.
- Added the ability to save and load the network's architecture in JSON files.
- Trained network on different popular datasets such as Cifar-10 and MNIST digits.
- Learned the inner workings and mechanisms behind deep learning.

Fanboy: GameBoy Emulator **May 2024**

- Developed a custom GameBoy emulator using C++ and SDL 2 (Simple DirectMedia Layer).
- Can dynamically change the in-game palette colors during runtime through an intuitive and easy to use GUI.
- Supports a plethora of games such as Tetris, Pokemon Red/Blue, and Super Mario Land.
- Has support for ROM Only, MBC1, MBC2, and MBC3 Cartridge types.

COMPETITIONS

ACM ICPC: Div 1 **November 2024**

- Competed in ACM ICPC Div. 1, held at Wilkes University, in a three-person team of West Chester University Computer Science students.
- Ranked 2nd at Wilkes University, ranking 22nd out of 68 teams in the region.

PACISE **April 2024**

- Competed in PACISE programming competition, held at Kutztown University, in a three-person team of West Chester University Computer Science students.
- Ranked 1st among 12 teams from several universities all across Pennsylvania.

ACM ICPC: Div 2 **February 2024**

- Competed in ACM ICPC Div. 2, held at Wilkes University, in a three-person team of West Chester University Computer Science students.
- Ranked 2nd at Wilkes University, ranking 26th overall among 93 teams across the Mid-Atlantic, South Central, and Southeast USA.