

# Avery Simmons

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[github.com/AverySimmons](https://github.com/AverySimmons)

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## Education

### University of Victoria — 2023 - Present - Victoria, BC, Canada

Bachelor of Computer Science expected April, 2027  
Current 3.7 GPA

### Headwaters School — 2020 - 2023 - Austin, Texas, United States of America

High School Diploma awarded May, 2023  
International Baccalaureate Diploma awarded July, 2023  
Honor Roll, 10th-12th Grade

## Professional Summary

Passionate and self-motivated programmer with a profound love for game development and machine learning, stemming from a lifelong obsession with learning and automation. Looking to gain experience and meet interesting people.

## Skills

Godot Game Engine / GD Script  
Test Driven Development  
Game Design  
HTML/CSS/JavaScript

C/C++  
Algorithm Optimization  
Java  
Communication

Python  
Amazon Web Services  
Git  
Machine Learning

## Projects

### Pac-Man Horror Game

A creepy twist on the classic retro game Pac-Man built in the Godot game engine.

- Created a unique enemy AI to build tension
- Used sound design and lighting to create a stressful atmosphere
- Designed custom logic utilizing inverse kinematics to create a monster

(<https://github.com/AverySimmons/Scary-Pac-Man/blob/main/README.md>)

### Deep Learning From Scratch

Reinventing the deep learning wheel entirely from scratch in C, with comprehensive test coverage.

- Manual memory management, custom neural network structures with allocated arrays
- Dense neural networks, ReLU, matrix back-propagation, gradient descent, 2D input matrices
- Full testing for all functions, crucial to catch subtle mathematical errors affecting learning

(<https://github.com/AverySimmons/Deep-Learning-From-Scratch/blob/main/README.md>)

### ASCII Madness Bot

A bot that plays the game ASCII Madness made from a combination of genetic learning and computer vision.

- Used the PyGad python library to train an AI from modified source code
- Developed a custom replay system to gather additional data from training
- Custom game object recognition using the python library cv2

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Check out my portfolio for more projects: <https://averysimmons.github.io>