# Vaibhav (Vai) Patankar

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## EDUCATION

**Pennsylvania State University** **June 2025 - 2029| University Park, PA**

B.S Computer Science and Math (Dual Major) 4.0/4.0

Relevant Coursework: Data Structures and Algorithms (CS 132), Multivariable Calculus (Math 230), Linear Algebra (Math 220), Discrete Math (CS 360)

**Conestoga High School** **August 2021 - June 2025 | Berwyn, PA**

Relevant Coursework: AP Computer Science A (Java), App Development 1 & 2 (C#), AP Statistics (R), AP Computer Science Principles (Python), AP Physics C: Mechanics, Electricity and Magnetism, AP Calculus BC

## EXPERIENCE

**Research Assistant | OCaml, Haskel** **April 2025 - July 2025**

*University of Michigan*

- Research assistant for the Future of Programming Lab run by Dr. Cyrus Omar, which explores next-generation programming environments by inserting "type-holes" as placeholders for missing code.
- Assisted with code review, analyzed and summarized papers to the team, and gained experience in programming language theory.

**Robotics Team Lead Programmer | Github Code** **September 2022 - March 2025**

*Vex Robotics 6121A - Worlds Division Semifinalist*

- Led a team of programmers for VEX teams 6121A and 6121E. Developed autonomous and driver control code using C++ and the PROS library. Implemented PID control and odometry for precise robot movement.
- Won multiple tournaments and awards over the past 3 years including placing top 16 in the Worlds Division out of 800 teams.

## PROJECTS

**Map App| Github Code | C#, .NET, MAUI, XAML, XML** **2024 - 2025**

- Developing a map and announcement app for my high school to improve navigation and communication.

**RPG Game| Demo | C++, SDL 2.0** **2024**

- Designed and built a 2D maze-style RPG using SDL 2.0

**Unity Projects | Github Code |Ithc | C#** **2024**

- A collection of Unity games created for my App Development 2 class, including a Fruit Ninja-style game, sumo wrestling, a running game, and more.

**Evil Hangman | Github Code | C#** **2023**

- A devious twist on Hangman where the game dynamically changes causing the player to never win.

**AP CSA Projects | Github Code | JAVA, Processing** **2022**

- Developed various projects for AP Computer Science A, including Tic-Tac-Toe, a Circle Game, a BFS/DFS pathfinding project, JUnit tests using imaginary numbers, and binary search implementations.

## SKILLS

**Programming Languages:** C++, Python, C#, Rust, OCaml, Java, XML, SQL, Ruby, R
**Frameworks:** PyTorch, .NET MAUI, SDL 2.0, Processing**,** Pygame, NodeJS, React, Open-GL
**Technologies:** Git, Linux (Arch), Latex, Unity3D, NeoVim, VSCode, Visual Studio

## HONORS AND AWARDS

- **USACO Platinum (C++)**
- **AIME Qualifier**
- **AP Scholar with Distinction**