

Patrick Ptasznik

Wood Dale, IL | patrickptaszni@gmail.com | (630) 329-5250 | [LinkedIn](#)

EDUCATION

The University of Illinois at Urbana-Champaign

Expected May 2025

Bachelor of Science in Computer Engineering

- Relevant Coursework: Data Structures, Computer Systems & Programming, Digital Systems Laboratory, Discrete Structures, Introduction to Computing, Analog Signal Processing, Linear Algebra, Calculus I-III

SKILLS

Programming Languages: C++, C, Python, HTML, CSS, System Verilog, Assembly Language

Developer Tools: Git, Linux, Visual Studio, Docker, GNU Debugger, Valgrind, PyTorch, OpenCV, Xilinx Vivado, Intel Quartus, Anaconda, Discord Developer Portal, Scopy, AutoCAD

Spoken Languages: Fluent proficiency in English and Polish, conversational proficiency in Spanish

PROJECTS

SIGPwny Discord Bot

September 2022 – December 2022

Bot Developer (Python)

Champaign, IL

- Collaborated with a team of 6 to enhance SIGPwny's Discord bot, introducing a point system to track coding challenge achievements for members of the cybersecurity club.
- Implemented threading techniques to optimize the bot's efficiency and performance while integrating external services such as HackerRank to expand the bot's functionality.

Image Enhancement and Sticker Integration Tool

August 2023 – September 2023

Software Developer (C++)

Champaign, IL

- Developed a versatile image enhancement tool with advanced color modifications, image scaling, and dynamic sticker placement, even beyond image boundaries, adjusting bounds for stickers placed outside the image.
- Implemented efficient data structures and algorithms, including STL vectors and custom classes to manage sticker layering, coordinate adjustments, and image transformations.

Anagram Dictionary

April 2023 – May 2023

Software Developer (C++)

Champaign, IL

- Developed an efficient binary tree-based anagram dictionary that optimized lexicographical word sorting, integrated linked lists for anagram storage, and executed tree traversals to save data in predefined orders.

FPGA-Based Endless Runner Game

October 2023 – Present

Game Developer (C, System Verilog)

Champaign, IL

- Worked with one teammate to design and build a functional simulation of Jetpack Joyride that implemented game mechanics, graphics, and responsive controls through hardware-software integration
- Developed game logic in C including a scoring system, user input handling, and level design, while implementing core components such as a system bus, RAM, video display, and keyboard input for user control

EXTRACURRICULARS

Association for Computing Machinery (ACM) – SIGPwny

August 2022 – Present

Member

Champaign, IL

- Attending workshops weekly and learning the fundamentals of computer cybersecurity such as web hacking, reverse engineering, binary exploitation, and more by participating in CTF challenges.
- Exploring the structure of computer systems and networks by analyzing their vulnerabilities.

Illini EV Concept

August 2022 – December 2022

Member

Champaign, IL

- Attended weekly meetings to utilize frameworks and tools such as PyTorch and OpenCV to learn the application of machine learning in computer programs regarding object detection and localization of an automobile.