

ETHAN PASCUAL

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EDUCATION

Stony Brook University

Stony Brook, NY

B.S. Computer Science and Applied Mathematics & Statistics Double Major

Accelerated B.S./M.S. Computer Science Program

Expected Graduation May 2026

Honors Computer Science Program

GPA: 3.68/4.00

Relevant Coursework: CS Foundations, Systems Foundations (MIPS), Data Structures (Java), Software Dev, Calculus 4, Statistics, Web Development (JavaScript), Computer Networks, Algorithms, Databases, Computer Vision

PROJECTS

Context-Aware Screen Brightness Research | Python, tkinter, OpenCV

October 2024 – November 2024

- Developed a context-aware screen brightness adjustment system using **OpenCV** and the LAB color space, enabling precise ambient light detection for enhanced user comfort.
- Implemented the Weber-Fechner Law to calculate optimal screen brightness based on ambient lighting and user tasks, dynamically adjusting brightness to reduce eye strain and improve productivity.
- Built a sleek **Tkinter**-based GUI, allowing users to customize brightness settings and providing manual overrides.
- Conducted validation through heuristic evaluation and performance testing, demonstrating high accuracy, fast response times, as well as improved usability in dynamic lighting environments.

Set Bot | Python, OpenCV

July 2024 – Present

- Built a card-matching bot using **OpenCV** which processes video input to detect and match cards in the game “Set” by analyzing contours.
- Utilized color-matching algorithms along with **ORB** for feature extraction, allowing for precise classification of “Set” cards based on color, shape, and shade.
- Implemented dynamic programming to optimize the matching process and compute valid matches from features.
- Through optimal matching algorithms and leveraging ORB for real-time card identification, enabling the bot to outperform 90% of human players.

MediFlow | Socket.io, MERN Stack, FullCalendar.js

March 2024 – May 2024

- Developed a fully deployed **MERN** process management web application, aimed at optimizing and automating Stony Brook Hospital’s ERAS (Enhanced Recovery After Surgery) pathway system.
- Utilized **Socket.io** to streamline real-time chat functionalities and group chats, ensuring doctors received notifications when their involvement was needed; developed flexible frontend components for process creation using Material UI.
- Leveraged Jest/Supertest and Cypress for full stack testing, as well as set up a GitHub Actions CI/CD to run tests
- Used cookies and **JWT** to ensure secure user authentication as well as maintaining session integrity.
- Enhanced communication and coordination among healthcare providers, leading to more efficient patient care.

LEADERSHIP AND EXPERIENCE

Lavner Education | Norristown, PA | Remote

June 2023 – August 2023

IT Intern

- Conducted interactive coding workshops for children aged 7-12, fostering an engaging learning environment.
- Configured gaming software servers during in-person sessions and conducted Zoom classes on Python and **Pygames** for virtual sessions, teaching programming concepts and game development.
- Guided campers through gaming software servers, as well as leading virtual students through lessons on Python and Pygames, including demonstrations of Python Shell IDLE and graphics creation.
- Taught students how to manage their own servers, code in Python, and use Pygames to build their own games.

Theta Tau Professional Co-Ed Engineering Fraternity | Stony Brook, NY

January 2023 - Present

Professional Development Coordinator

- Supervises study hours for members, promoting communication in order to further understand topics learned in class.
- Organizes workshops where guest speakers talk to members about useful skills to grow professionally.
- Hosted academic workshops and provided sufficient resources for our members, such as scholarship opportunities, job openings, and upcoming on-campus events, enabling 70% of members to secure an internship.

SKILLS

Programming Languages: Java, Python, JavaScript, C#, SQL, HTML/CSS, MIPS Assembly

Technology: OpenCV, Pandas, Microsoft Office, Pygames, GitHub, Socket Programming, MongoDB, Express, React, Node.js, OpenAI, Socket.io, AWS Cloud