Manuel Paul

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EDUCATION

Rutgers University - Honors College   New Brunswick, NJ
Bachelor's of Science - Computer Science & Data Science; GPA: 3.83; Dean's List   Expected May 2027
- **Relevant Coursework:** Computer Architecture, Discrete Structures, Data Structures, Data 101, Linear Algebra

TECHNICAL SKILLS

Languages: Python, Java, Kotlin, Swift, R, C++, C, Javascript, HTML
Frameworks & Libraries: React, SwiftUI, UIKit, TensorFlow, PyTorch, OpenCV, NumPy, Pandas, Matplotlib, Scikit-learn, XGBoost, Plotly, Prophet
Developer Tools: Git, Firebase, Xcode, Android Studio, Jupyter Notebook, AWS, JUnit, GDB
Soft Skills: Leadership, Strong Communication, Problem-Solving, Adaptability, Teamwork, Critical Thinking

EXPERIENCE

Rowan University | Web Developer   **Jun 2023 - Aug 2023**
- Designed a university web page with forms/registration using HTML, CSS, and PHP.
- Collaborated with a team in web design and development in the Department of Computer Science to ensure UI layout and functionality on mobile devices as well as desktop computers.

Sonny Werblin Recreation Center | Recreation Assistant   **Sep 2025 - current**
- Greet and assist visitors, manage access, answer questions, and support operations by monitoring spaces, enforcing policies, and maintaining a safe, welcoming environment. Support events and tours, collaborating with staff to ensure smooth operations and positive experiences.

PROJECTS

Allergen Scanner App | Kotlin, Swift, TensorFlow, OpenFoodFacts API   **May 2025 – Aug 2025**
- Developed cross-platform apps in **Kotlin** and **Swift** utilizing the **OpenFoodFacts API** and **TensorFlow** to detect food allergens in real-time via barcode scanning and image recognition.
- Implemented **CodeScanner** for iOS camera integration and utilized coroutines, asynchronous patterns, and OOP principles to ensure high-performance data processing and a responsive user experience.

Crypto Portfolio App | https://crypto-portfolio-app.expo.app/ | React Native, Python   **Jul 2025 – Aug 2025**
- Developed a **React Native** mobile application providing real-time statistics for the **top 250 cryptocurrencies**, featuring **persistent storage** for portfolio tracking and **REST API** integration for live market data.
- Built **interactive charts** for data visualization and integrated a **Python Prophet machine learning model** to perform **time-series forecasting** on 24-hour price movements.

Fetchr | Python, YOLOv8, Swift, ESP32, IoT   **Oct 2025**
- Engineered an integrated pet safety system using an **ESP32** microcontroller, GPS tracking, and IoT sensors to monitor real-time health data via a **SwiftUI** mobile application.
- Developed a custom **YOLOv8** computer vision pipeline in **Python** to classify pet emotional states from imagery, automating owner alerts and care recommendations based on detected moods.

NBA Twitter Bot | Python, X API (Tweepy), CSV Data Handling   **Aug 2025**
- Engineered an automated bot using **Python** and the **X (Twitter) API** to broadcast a curated database of historical and active NBA players at 85-minute intervals.
- Implemented a persistent data pipeline that utilizes **CSV parsing** and **array-based data structures** to track player entries, ensuring unique posts by dynamically updating the source file and managing API rate limits.

Flappy Bird Remake | https://manuelp-12.github.io/flappy-demo/ | JavaScript, HTML5, Neataptic   **Jul 2025**
- Recreated the Flappy Bird game engine from scratch using **JavaScript** and **HTML5**, implementing custom physics, collision detection, and progressive difficulty scaling.
- Integrated the **Neataptic** library to develop a neural network that utilized neuroevolution to learn optimal flight patterns, evolving through generations to eventually master and beat the game.

Snake Remake | https://manuelp-12.github.io/Snake/ | JavaScript, HTML5, CSS3   **Jun 2025**
- Reengineered the classic Snake game using **JavaScript** and **HTML5 Canvas**, implementing custom **collision detection algorithms** and **frame-based movement** logic for smooth gameplay.
- Architected the codebase using **Object-Oriented Programming (OOP)** principles, utilizing classes for game entities to ensure **modular, maintainable code** and efficient state management.

LEADERSHIP & CERTIFICATIONS

Rutgers Org. of Cloud Computing (ROCC) | Treasurer   **Jan 2026 – Present**
- Facilitating a professional network and learning forum focused on upskilling students in cloud architecture (AWS/Azure) through technical workshops and industry networking events.
- Managing the organization's budget and financial allocations, overseeing expenditures for club meetings and social events to ensure sustainable operations and member engagement.

Beginning C++ Programming   **Dec 2025 - Jan 2026**
- Completed an introductory course on C++ programming, covering core concepts including syntax, control structures, functions, pointers, memory management, and the standard template library. Built a strong foundation in C++ for systems-level and performance-critical development.

Mastering Kotlin for Android Development   **Jan 2026 - Present**
- Completed a comprehensive course on Kotlin for Android development, focusing on object-oriented design, coroutines, and modern Android app architecture. Gained hands-on experience building responsive, user-friendly mobile applications using industry best practices.