Ryan Puharic

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Education

Rutgers University Sep 2021 – Jan 2025
Bachelor of Science in Computer Science, Bachelor of Arts in Cognitive Science *3.72/4.00 Cumulative GPA*

Experience

Software Innovation Intern May 2024 – Aug 2024
Aersys *Piscataway, NJ*

- Spearheaded the creation of SkyFetch, a drone delivery hub that integrates with Google's Wing delivery service, utilizing **C++** on a **Raspberry Pi** to control stepper and servo motors that lift bins and packages.
- Directed a team of engineers in designing, prototyping, and facilitating the logistics of building the hub, while also creating financial forecasts and pitching SkyFetch to a panel of mock investors.
- Developed an AI voice chat assistant in **Python** using **OpenAI's Assistants API** and a **Streamlit** GUI to streamline data retrieval from a warehouse management system, saving time spent manually checking inventory.

Data and Analytics Intern May 2023 – Aug 2023
Otsuka Pharmaceutical *Princeton, NJ*

- Collaborated with an international team of software engineers and data scientists to implement machine learning algorithms in **Python** and **SQL** onto the **Dataiku** platform. This segmented thousands of healthcare providers based on their likelihood to prescribe a drug, enabling marketing professionals to increase revenue generation.
- Restructured the layout of a **PowerApps** web application, used for documenting FDA compliance violations, by integrating external databases and streamlining the UI to minimize errors in user inputs.
- Developed an executable **Python** app that automated Japanese translation of English business cards, via the **DeepL Translation API**, eliminating hours of manual translation time.

Research Assistant Jan 2023 – May 2023
Rutgers Center for Cognitive Science *New Brunswick, NJ*

- Applied Principal Component Analysis in **Matlab** to identify underlying patterns in multi-dimensional EEG time-series data, minimizing data complexity and reducing manual preprocessing time.
- Utilized **Prompt Engineering** to test GPT-4's ability to classify sequences generated from same finite state machines, revealing its limitations compared to humans in recognizing patterns without explicit rules.

Projects

skateable Oct 2024

- Developed a **JavaScript** web app deployed with **Render** that uses Mapbox and OpenStreetMap to allow a community of 50+ users to draw and save 500+ biking/skating routes and rate their smoothness and safety.
- Implemented a backend with **Node.js**, **Express**, and **MongoDB** to store user-generated routes and user authentication with hashed passwords via integrated API endpoints.

CatanHelper Dec 2023

- Developed a full stack web app that improves Catan gameplay by optimizing and customizing board setups.
- Implemented **OpenCV** in **Python** to analyze user-generated images of both physical and online boards.
- Linked back end to **PostgreSQL** database using **Flask** to allow for personalized generalization settings.
- Deployed front end created with **HTML**, **CSS**, and **Javascript** to the web using **AWS** and **Heroku**.

Summit SMS Browser May 2021

- Collaborated on a Hackathon-winning **Python**-based Android application allowing users to browse the internet without Wi-Fi or cellular data, using the **Twilio REST API** to transfer web content via SMS messaging.
- Implemented **BeautifulSoup** to pre-process the raw HTML data. Encoded this data into the RGB values of pixels in a 500x500 image, allowing us to transfer 4,600 times more content in one SMS message.
- Utilized the **Flask** framework to build a web browser that functioned similar to Google or Safari.

Technical Skills

Languages: Python, Java, JavaScript, SQL, C, C++, HTML/CSS, Matlab
Frameworks: React Native, React.js, Node.js, Express.js, Flask, PyTorch, OpenCV, AWS, MS Power Platform
Developer Tools: Git, Android Studio, Eclipse, Dataiku, MongoDB, PostgreSQL, Heroku, Render, Raspberry Pi