Alexander Witkowski

EDUCATION

- **University of Pittsburgh — School of Computing and Information** — Pittsburgh, PA
  Bachelors of Science in Computer Science — *Aug 2021 - May 2024*

RELEVANT COURSEWORK

- **Interface Design Methodology**: Gained a solid understanding of modern UI design concepts and proficiency in the Flutter UI framework and MVVM design pattern. Created a dating app with a "daily" photo using Flutter and a Firebase backend
- **Human-Computer Interaction**: Studied HCI principles and research practices through user testing, prototyping, HCI metrics, interviews, contextual inquiry, affinity diagramming, user personas, storyboarding, co-design, expert review, and field deployment
- **Practical AI**: Learned and implemented Machine Learning Algorithms, Big Data applications, BigQuery, Image Classification, and TensorFlow Classification. Applied by developing a ticket platform using Google BigQuery to predict flight delays
- **Discrete Structures & Formal Methods**: Utilized mathematical structures to solve problems, use logic, proofs, sets, relations, functions, combinatorics, and probability from a Computer Science context.

EXPERIENCE

- **Software Engineering Intern** — Pittsburgh, PA
  Sheetz — Enterprise Architecture — *May 2022 - Present*
  - Designed and developed a new product to track company metrics and display them to the exectuives and planning team to ensure company-wide communication of business goals and objectives
  - Utilized a GoLang back-end to create an HTTP-based application that utilized asynchronous GoRoutines to deploy the API Server and a Metric processing server that took in several data points and aggregated data
  - Designed ReactJS front-end application utilizing ChartJS for displaying data

- **Teaching Assistant (Computer Science)** — Pittsburgh, PA
  University of Pittsburgh — School of Computing and Information — *Aug 2022 - May 2023*
  - Taught and mentored 94 students across three courses: Intermediate Programming, Introduction to Computing for Engineers, and Discrete Structures for CS, resulting in positive student and instructor feedback through evaluations
  - Delivered high-quality instruction and provided comprehensive support through office hours and weekly recitations

- **Software Engineering Intern** — Allentown, PA
  B. Braun Medical Inc. — Software Research and Development — *May 2022 - Dec 2022*
  - Contributed to the development of DoseTrac Enterprise Infusion Services, a tool for clinicians to track infusions
  - Completed 520 story points with a team of 8, under the mentorship of a solutions architect, improving infrastructure, enhancing tech stack efficiency by refactoring API calls, writing technical documentation, and redesigning both Angular front-end and .NET framework utilizing C, C#, C++, Java, Python3, and TypeScript
  - Aided in turning a single application product into a multi-facility enterprise software, allowing real-time updates to an unprecedented 40,000 pumps

- **Software Engineering Work-Study** — Pittsburgh, PA
  University of Pittsburgh — Physics and Astronomy Department (PQI, Levylab) — *Aug 2021 - May 2022*
  - Assisted distinguished Professor Jeremy Levy with IT Operations such as backend to aide in research
  - Analyzed and troubleshot system errors and malfunctions on AWS EC2s and other sandbox environments to determine appropriate resolution tactics and dockerize labs processes like the URL shortener, Item Beacon (geo location for items), Live Graphing, and N8N instances including a postgres TimeScale database

ACTIVITIES

- **PennApps 2024**: Designed Frody, a real-time fraud detection application. Used machine learning and BigQuery in a scalable distributed system. Recognized with awards for "Best Distributed Systems Hack" (sponsored by Five Rings) and "Most Technically Complex Hack" at PennApps XXIV, hosted by the University of Pennsyvlania (2024')
- **RateMyEats**: Competed in the SteelHacks hackathon hosted by the University of Pittsburgh by working with technologies of Swift and Google Firebase to develop a mobile application that allows users to anonymously rate campus dining hall food (2022')
- **SteelHacks Organizer**: Co-organized Pitt's yearly hackathon for 100+ students by creating a discord and devpost (2022')
- **n8n**: Contributed to n8n repo, version n8n@0.165, using Typescript to create a new Asana interaction with the IOT app (2021')
- **The New Funniest Minecraft Mod Ever**: Aided youtuber TommyInnit in amassing 20 million views by creating a Minecraft mod using Kotlin and FabricMC to change the player's size in "funny ways" (2020')
- **Discord Hackathon**: Placed third out of over 100 teams in a remote hackathon hosted by Discord by working with two teammates to develop a Discord Moderation Bot using NodeJS and Express as a framework (2018')