

CALEB MOWERY

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EDUCATION

The Pennsylvania State University

College of Engineering | B.S. in Computer Science

Minor in Entrepreneurship and Innovation

University Park, PA

Aug. 2023 – May 2027

GPA: 3.67/4.0

EXPERIENCE

Maximo/GIS Intern

Duquesne Light Company

May 2025 – Aug 2025

Pittsburgh, PA

- Managed a 12-intern team in developing *Luma*, an Azure-based internal chatbot leveraging LangChain, GPT-4o mini, and Cognitive Search to implement Retrieval-Augmented Generation (RAG) based on corporate documents
- Reduced querying and migration time of IBM Maximo's 6 largest database objects by 70-90% with the development of a python script that integrates Maximo's REST API and SQL in order to archive older entries in these tables
- Deployed a *Query Manager* tab within DLC's Maximo package, using SQL and Maximo's Application Manager to provide admin users with an interface for freeing database space by editing or eliminating outdated queries
- Skills:** Python, SQL (Oracle), LangChain, IBM Maximo, Azure, Agile

Student Developer

Penn State THON™

May 2025 – Present

University Park, PA

- Optimized dance floor pass distribution algorithm, saving smaller organizations ~200 hours combined of wait time by calculating a "dancer need score" attribute in each visitor's Django model and sorting the queue by this score
- Enhanced the THON™ dashboard software's radio headset checkout feature, eliminating restrictive bugs in Python logic and saving time spent dealing with edge cases when checking out headsets during the event
- Organized redirection layout in the front end of the THON™ dashboard in order to reduce average clicks per action and eliminate dead-ends on pages, improving user experience, work flow, and overall efficiency
- Skills:** Django, Python, Docker, HTML/CSS, JavaScript

Research Assistant

Pennsylvania State University

Aug 2024 – Present

University Park, PA and Kisumu, Kenya

- Designed *Walimu Kwanza*, a web app with over 200 users, on which Kenyan teachers can share lesson plans and classroom resources, as well as upload and answer questions to community forums, built using Adalo
- Researched teacher struggles in Kisumu, holding 2-4 stakeholder meetings a week focused on co-designing a digital solution to address issues with understaffing, low government funding, and a recent curriculum change in Kenya
- Composed a research manuscript on these conversations alongside *Walimu Kwanza* usage data to argue that educational technology can be an effective tool in addressing teacher difficulties in low-resource settings
- Skills:** User Research, UI/UX Design, Adalo, Figma, Academic Writing

PROJECTS

Walimu Kwanza | Python, Flask, React, PostgreSQL, Docker

June 2020 – Present

- Developed a full-stack web application using with Flask serving a REST API with React as the frontend
- Implemented GitHub OAuth to get data from user's repositories
- Visualized GitHub data to show collaboration
- Used Celery and Redis for asynchronous tasks

Simple Paintball | Spigot API, Java, Maven, TravisCI, Git

May 2018 – May 2020

- Developed a Minecraft server plugin to entertain kids during free time for a previous job
- Published plugin to websites gaining 2K+ downloads and an average 4.5/5-star review
- Implemented continuous delivery using TravisCI to build the plugin upon new a release
- Collaborated with Minecraft server administrators to suggest features and get feedback about the plugin

HONORS AND INTERESTS

Honors: Eagle Scout Award, The President Walker Award

Interests: Bouldering, Breaking Bad, Leg Day, Noah Kahan, Outer Banks, Philosophy, Pearl Jam, Texas Hold 'Em