

ELIAS BENBOURENANE

Software Engineer / Student • [GitHub](#) • [LinkedIn](#) • [Portfolio](#)
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TECHNOLOGIES

- **Languages:** Python, Java, Go, JavaScript, TypeScript, Rust, R, C, MIPS, Godot, HTML, CSS, Bash, PowerShell
- **Frameworks:** Django, Flask, FastAPI, React.js, Vite.js, Vue.js, Next.js, Svelte, Express.js, Node.js, Tauri, Qt
- **DBMS:** SAS, PostgreSQL, TimescaleDB, SQLite, Oracle SQL, MongoDB
- **AI/ML:** PyTorch, TensorFlow, Jupyter, RStudio, Pandas, NumPy
- **DevOps:** AWS, Oracle Cloud, GitHub Actions, Azure Pipelines, Docker, Jest.js, JUnit

EXPERIENCE

SOFTWARE ENGINEER

May 2023 - Presently

DBMI Pitt | *Python, TypeScript, R, React.js, FastAPI, SAS, SQL, PyTorch, Jupyter, Docker*

Pittsburgh, PA

- Scripted **SAS** and **SQL** programs that generate statistical summaries of patient electronic health records in the *PCORnet* database, a national medical network of **hundreds** of hospitals and over **30 million** patients yearly.
- Designed a service for PCORnet patients to query or chart drug, condition, and demographic data with **React.js** and **FastAPI**.
- Deployed a high-performance **Linux** server for research on large medical datasets packaged with locked-down **Jupyter** and **RStudio** environments in user-isolated and GPU-enabled **Docker** containers.
- Designed a dashboard with **React.js** for care coordinators to predict possible prescription errors during cross-center patient transitions with **machine learning**.
- Developed a **REST API** for querying various self-hosted **AI** language models optimized with block-wise quantization and request queuing to manage high GPU loads in a shared environment.

SOFTWARE ENGINEERING CONSULTANT

Jul 2023 - Sep 2023

FULL STACK DEVELOPER INTERN

May 2023 - Jun 2023

CAASI | *Python, TypeScript, React.js, Django, SQLite, Docker, AWS, GitHub Actions, Jest.js*

Pittsburgh, PA

- Migrated the *412Connect* project, a service to educate and inform the public about local businesses, to an entirely new stack and was responsible for backend, frontend, and database design in a **Django**, **React.js**, and **SQLite** stack.
- Developed a **user analytics** and tracking system for *412Connect* featuring a dashboard, charts, graphs, and search/filtering.
- Introduced new DevOps pipelines, including CI/CD building, testing, and deployment to **AWS** using **GitHub Actions**.
- Was promoted to a **consulting** role to provide guidance and strategic direction for the project beyond my internship tenure.

SOFTWARE DEVELOPER

Dec 2022 - May 2023

Levy Lab | *Go, TypeScript, React.js, TimescaleDB, Docker, AWS, GitHub Actions*

Pittsburgh, PA

- Refactored **SQL** tables containing billions of rows in a **TimescaleDB** database to optimize indexing.
- Maintained *Grafana* fork, which involved full-stack development with **Go** and **React.js** to integrate features for **TimescaleDB**.
- Wrote **GitHub Actions** pipelines to automate building and deployment of Docker images for **AWS EC2** containers.
- Served as a webmaster, handling DNS management, SSL certificate installation, and web hosting for the lab's websites.

PROJECTS

DESTER

Nov 2020 - Nov 2022

Python, Go, JavaScript, React.js, FastAPI, MongoDB, Docker, Github Actions

- Founded *Dester*, the successor to my past project, *libDrive*, a powerful and lightweight solution to interface media libraries.
- Assumed a managerial role and led a team of developers and designers to build the project end-to-end and cross-platform.
- Was heavily involved in all areas of development, including backend, frontend, mobile, desktop, database, and DevOps.

NAHAR STUDIOS

Oct 2021 - Presently

Python, Godot, Flask, MongoDB

- Co-founded *Nahar Studios*, a hobbyist game studio comprised of diverse and talented programmers, artists, and musicians.
- Participated in six game jams, published to the Google Play Store, and currently in development of a metroidvania game.
- Built all the studio's web-based programs, including the backend APIs for leaderboard systems and their portfolio website.

RELEVANT COURSEWORK

Web Applications • Data Structures and Algorithms • Assembly • Systems Software • OS • Formal Methods • Quality Assurance

EDUCATION

UNIVERSITY OF PITTSBURGH

Aug 2022 - Apr 2026

Bachelor of Science in Computer Science

Pittsburgh, PA