

Ehab Abdalla

(347) 536-0706 - Greater New York City Area - ehababdalla03@gmail.com

LinkedIn • GitHub • Website

Objective

Backend Engineer specializing in large-scale data pipeline design, cloud-native infrastructure (GCP, Docker), and high-performance PostgreSQL systems. Proven track record reducing query latency and scaling ETL workflows to handle terabytes of structured data.

Professional Experience

Base Layer — Software Engineer II

Jan 2025 – Present

New York, NY

- Owned the **end-to-end design, implementation, and operation** of large-scale **Secretary of State (SOS) and lien data pipelines**, processing **200–300 million records weekly** using **Python, Apache Beam, Google Dataflow**, and **Pydantic**.
- Architected and optimized **PostgreSQL** schemas with **SQLAlchemy** (indexes, constraints, partitioning, relationships) to support **1.2TB** of structured SOS and Lien data, reducing average query latency from **1.4s to 320ms**.
- Built and maintained **FastAPI** services handling **12k requests/day**, containerized with **Docker** and deployed on **Google Cloud VMs** to expose SOS and lien data to internal and external consumers.
- Developed **50+** automated data aggregation automations deployed as **Google Cloud Run Jobs**, leveraging **Playwright**, **proxies**, and **subnet-based IP routing** to continuously collect and refresh state-level business data.
- Maintained production observability and participated in on-call rotation using **Sentry** and **incident.io**, triaging and resolving incidents across data pipelines, APIs, and supporting infrastructure.

Ansys — Software Engineer in Test (SDET) Intern

Aug 2023 – Aug 2024

Canonsburg, Pennsylvania

- Executed **manual and regression testing** across **20+** hardware and OS configurations, logging **dozens of defects, regressions, and performance issues** in **Azure DevOps**.
- Automated **multiple regression workflows** using **Ansys ARM** with **Python**, and authored **50+ unit and integration tests** with **pytest**, increasing automated test coverage and catching failures earlier in each release cycle.
- Migrated an internal system from **Windows Server 2019 to Windows Server 2022**, improving **SQL query performance** and reducing latency through configuration tuning, indexing, and cleanup routines.

Skills

Languages: Python, Java, C++, JavaScript, TypeScript, SQL, Bash

Frameworks/Tools: FastAPI, React, Next.js, SQLAlchemy, Docker, Redis, Playwright, Pytest, Selenium

Cloud/DevOps: Google Cloud (Cloud Run, Dataflow, VMs, Storage), AWS, Linux, Git/GitHub, CI/CD (GitHub Actions)

Databases: PostgreSQL, MongoDB, Firebase

Projects

real-swe — Founder & Software Engineer

real-swe.com

- Founded and built a full-stack platform focused on **real-world software engineering practice**, featuring **problem challenges, daily project generators**, and **GitHub-based repository quizzes**.
- Architected and implemented the backend using **FastAPI, SQLAlchemy, PostgreSQL**, and **Redis**, supporting authentication, async job orchestration, and scalable project-generation workflows.
- Developed a **Next.js + TypeScript** frontend with an embedded **Monaco IDE**, and integrated **Judge0** for secure, browser-based, multi-file code execution.
- Implemented **Stripe subscription billing** with webhook-driven plan management, **Redis-backed rate limiting**, and **Clerk JWT authentication** with just-in-time user provisioning.

PPP Data Analyzer

GitHub

- Built a containerized ETL pipeline using **Python, Docker, PostgreSQL, Playwright, Apache Beam**, and **FastAPI** to ingest, validate, and serve PPP loan data.
- Designed a lightweight **HTML/CSS/JS** frontend served via **Nginx Alpine** for exploring millions of PPP loan records with fast rendering.
- Integrated a **GPT-powered natural-language querying module** that converts user questions into optimized SQL for instant data insights.

Education

The City University of New York, Queens College

Dec 2024

Bachelor of Science in Computer Science

Leadership: Code For All, ColorStack, ALPFA QC, DICE, Code.ReSolve()

Certifications: CodePath Cybersecurity, CodePath Technical Interview Prep