

## Profile

Hands-on AI engineering leader who builds and scales LLM and knowledge-graph systems, scientific software, and data platforms for genomics, biotech, and drug discovery. Experienced leading multidisciplinary engineering teams while contributing directly to architecture, implementation, evaluation, and production delivery.

## Experience

**Director of AI Engineering**, Genomenon; *May 2024 to Present — Remote*

- Lead teams of up to 8 software engineers in developing and deploying **AI/ML products for Genomenon's genomics intelligence platform**.
- Developed an agent-driven schema and prompt optimization workflow for genomic evidence extraction, improving variant-mention recognition recall **by 30 percentage points over the internal baseline**.
- Implemented process improvements and AI-assisted software engineering practices, reducing median work-item cycle time **by 86%, from 14 to 2 business days, within six months of rollout**.
- Lead development of **G3, the Genomenon Genomic Graph**, an **LLM-driven named entity recognition workflow** extracting structured evidence from a 10+ million-document corpus.
- Implement a system for **knowledge-graph** creation and curation to drive **RAG-based AI workflows and products**.
- Develop methods to detect hallucinated or low-confidence AI-generated text, improving trust, quality, and reliability of scientific outputs.
- Contributed to Genomenon's 2025 colon cancer patient case study presented at the **ACMG 2025 Annual Clinical Genetics Meeting**, helping generate 10+ prospective pharmaceutical sales leads.
- Delivered Genomenon's first G3 **Real World Evidence** dataset to a pharmaceutical customer: a comprehensive patient landscape for a rare disease target aligned to customer needs and treatment strategy.
- Deploy full-stack applications for data entry and curation, facilitating the migration from spreadsheets to structured databases.

**Technologies:** Python, JavaScript, PostgreSQL, Dagster, Hugging Face, OpenAI, Mistral, PyTorch, Docker, Appsmith, AWS

**Principal Engineer**, Systemic Bio; *August 2023 to May 2024 — Houston, TX*

- Served as a hands-on principal engineer across software, automation, infrastructure, and AI/ML objectives for an interdisciplinary biotech R&D organization.
- Initiated and executed an AI/ML proof-of-concept using **in vitro h-VIOS platform** data from 3D-printed vascularized organ models for **predictive toxicology** and **target discovery**.
- Embedded with a multidisciplinary project team across biology, bioengineering, biomaterials, and operations to execute in vitro experiments and acquire confocal microscopy and sequencing data to support AI/ML projects.

- Implemented bioinformatics analysis pipelines for generating **gene expression profiles** and **differential gene expression analyses**, deployed them in a hybrid-cloud data center, and migrated them to an on-premises bare-metal server.
- Implemented an internal **laboratory information management system** (LIMS) to promote traceability and quality of scaffold production, biological experimentation, data acquisition, and eventual ML model training.
- Delivered an internal inventory and item-management application for 3D-printed parts and components.
- Developed operational capacity models through **discrete-event simulation** to support manufacturing and production planning.
- Investigated and developed tools for **automated defect detection** in 3D-printed cellular scaffold models via imaging/confocal microscopy.

**Technologies:** Python, JavaScript, PostgreSQL, Litestar, Dagster, Scikit-Learn, SimPy, Docker, Appsmith

#### Director of Software Engineering, Absci; May 2021 to August 2023 — Remote

- Led and mentored a multidisciplinary team consisting of 11 software engineers and scientists (4 full-stack engineers, 4 data engineers, 3 bioinformatics scientists) delivering mission-critical software to support Absci's laboratory and AI operations.
- Defined and executed the engineering vision by planning roadmaps, leading regular team meetings, and establishing engineering best practices.
- Spearheaded the development and deployment of the **Core Services Platform**, Absci's internal web application solution for delivering software solutions.
- Built and deployed an interactive web application demonstrating AI-enabled antibody affinity maturation, used for Absci's AI-driven drug discovery presentation at **ICML 2022**.
- Authored and published an internal **software development kit** (SDK) providing a uniform, programmatic interface to internal and external services, including Benchling LIMS; the SDK was leveraged by the Software Engineering, Data Science, Bioinformatics, and AI teams for critical analysis pipelines and applications.
- Modernized critical bioinformatics analysis pipelines and deployed them in a modern orchestration framework using Airflow and SevenBridges, enabling seamless automated reporting for samples submitted to Absci's NGS instruments (5+ TB of data processed across 50,000+ samples and growing).
- Deployed production API services for interfacing with Absci's cutting-edge deep-learning models.

**Technologies:** Python, JavaScript/TypeScript, PostgreSQL, FastAPI, SQLAlchemy, Vue, Airflow, AWS, Benchling, SevenBridges

#### Senior Software Engineer, Team Lead, ScienceLogic; Nov 2019 to May 2021 — Remote

- Led a high-performing team of engineers in spearheading new UI initiatives for ScienceLogic's **SL1 Platform**, an AIOps and hybrid-cloud monitoring platform.

- Implemented new features and improvements to a public-facing GraphQL service and a legacy REST API.
- Identified and remediated critical security vulnerabilities through bug fixes and build process improvements.
- Integrated Common Access Card (CAC) authentication for a major initiative to attain Department of Defense software certification.
- Implemented an automated testing framework to validate impactful performance improvements to the Device Performance API delivered to ScienceLogic's marquee customer, Cisco.
- Proposed process improvements during sprint retrospectives that helped the team consistently complete over 80% of planned sprint commitments.
- Designated as a required reviewer for code changes made in my team's area of responsibility.

**Technologies:** JavaScript/TypeScript, PHP, Python 3, MySQL, Node.js, React, GraphQL

**Software Engineer**, Baker Hughes; May 2018 to Nov 2019 — New Orleans, LA

- Developed and deployed cloud-based web applications for the **Plant Operations Advisor** through GE Digital's Predix platform.
- Built modern user interfaces for viewing and interacting with data analytics and transitioned the UI from a legacy Polymer implementation to an Angular Material component library.
- Implemented critical database migration strategies to support new data models.
- Prototyped an event-driven framework for deploying analysis scripts via an orchestrated workflow system based on Celery and RabbitMQ.

**Technologies:** Java 8, Python 3, TypeScript, PostgreSQL, Spring, Angular 2+

## Education

### Baylor University

MSc in Computer Science — Waco, Texas

BSc in Bioinformatics — Waco, Texas