

Sam McGrail

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Senior full-stack engineer with 10 years building production web applications and developer tooling. Specializes in turning AI/ML and scientific systems into self-serve tools. Comfortable owning systems end-to-end, from API design and data pipelines to seamless UX and performant UI.

PROFESSIONAL EXPERIENCE

AstraZeneca

Senior Software Engineer

Boston, MA

Oct 2023 - Present

- ▶ Build and own internal full-stack web applications that bring AI/ML models into the daily workflow of computational and medicinal chemists, turning research-grade models into self-serve tools that accelerate the drug discovery process.
- ▶ Develop Python (FastAPI) services that wrap cheminformatics and ML pipelines (RDKit, in-house models) behind clean APIs, paired with React/TypeScript front-ends where users submit molecular structures (SMILES) and get predictions, scoring, and interactive visualizations.
- ▶ Configure and augment state-of-the-art OCR and ML models to extract and digitize chemical structures from images and PDF documents.
- ▶ Led the development of an automated safety-reporting system that interfaces with external applications to aggregate assay data and generate over 1,500 reports yearly, saving large teams of chemists weeks of manual work per year.
- ▶ Engineer Python ETL pipelines and integrations connecting internal platforms with external scientific tools and data sources, eliminating manual data handoffs across the discovery workflow.
- ▶ Deploy and operate containerized services on AWS-hosted Kubernetes via ArgoCD with GitHub Actions CI/CD.

Glaukos, Corneal Health Division

Senior Software Engineer

Boston, MA

Sept 2021 - Sept 2023

- ▶ Built medical-device touchscreen software (React, TypeScript, Redux, Node) interfacing over Protocol Buffers with an embedded system that drives a high-intensity UV laser.
- ▶ Rendered real-time targeting reticles and boundaries over the live video feed using low-latency SVG overlays.

doblePRIME

Software Engineer, UI Developer

Boston, MA

Oct 2015 - Sept 2021

- ▶ Built an interactive monitoring dashboard for transformer-substation engineers: aggregated multi-source hardware data behind a REST API with alerting, and visualized tens of thousands of datapoints in-browser with D3, SVG, and WebGL.

Doble Engineering

Laboratory Technician

Boston, MA

May 2013 - May 2014

- ▶ Performed dissolved gas analysis on transformer oil, diagnosing thermal and electrical faults from chromatogram data.
- ▶ Automated lab reporting with Excel/VBA macros, increasing weekly sample throughput by 20%.

Professional Musician

Pianist

Natick / Boston, MA

June 2012 - May 2016

- ▶ Played lounge music weeknights for 3-4 hours at various restaurants, sight-reading popular songs, taking requests, and playing for the audience in mind.

EDUCATION

University of Massachusetts Amherst

B.S. Psychology, Neuroscience Track

Amherst, MA

Sept 2009 - May 2013

TECHNICAL SKILLS

Languages: JavaScript / TypeScript, Python

Frontend: React, D3, WebGL, Three.js, MSDF

Backend & Data: Node, Bun, FastAPI, uv, ETL, REST APIs, Protocol Buffers, PostgreSQL

Infrastructure: Docker, Kubernetes, AWS, ArgoCD, GitHub Actions, CI/CD, Linux, shell-fu

ML & Domain: OCR, RDKit, Cheminformatics, PyTorch, ML pipelines, model serving