THOMAS TO

Oakland, CA, 510-387-5408, thomas.to.bcheme@gmail.com, Linkedin, AI/ML Portfolio

PROFESSIONAL SUMMARY

Senior AI/ML Engineer with experience deploying GenAI solutions on Google Cloud Platform (**GCP**) using Google **Vertex AI** for pipeline monitoring and orchestration. Expert in the full model lifecycle including fine-tuning models and architecting (multi) agentic RAG systems. Proven track record of collaborating with IT teams to integrate new solutions into business systems and stakeholders to understand business requirements and identify opportunities for AI-driven solutions. See https://thomas-to-bcheme-github-io.vercel.app/ for demonstration.

RELEVANT EXPERIENCE

Founder | AI/ML Open Source | Oakland, CA | *Oct 2023 – Present*

- **Github** Monolith for **CI/CD RAG** frontend on **AWS (Vercel: Next.js, TypeScript**), and **CT/CD Python ML models (scikit, pytorch, tensorflow**) on **Huggingface (FastAPI, Docker)**, with **Google Vertex AI** for MLOps monitoring.
- Multi-agentic orchestration (**langGraph**) with tool-use (**MCP, langChain**) to plan-and-execute tasks initiated with **retrieval augmented generation (RAG)**, optimized with **fine-tuning** for domain specific use case action items.

Founding Fullstack Engineer | **Canventa Life Sciences** | *Emeryville, CA | Oct 2023 – Present*

- Deployed in-house fullstack **DevOps SaaS** on **GCP** via **CI/CD**, converting serial to concurrent workflows reducing daily calculation time by 87% (-40 min), minimized calculation risk, and forecasted production within 3 of actual.
- Trained and monitored machine learning models on **Snowflake** to select for cell isolates from a set of donor characteristics with a **RAG AI Agent** to reduce stakeholder decision-making from hours to minutes.
- Augmented natural knowledge by **enriching RAG fine-tuning** with Atlassian (Confluence) to enhance **GenAI** (data-to-text, text-to-image) context improving learning rate up to 80% (Wright's Law: Stanford-B model).
- Fine-tuned Snowflake Doc. AI Arctic-TILT model to extract 5+ years of handwritten documents to cloud infrastructure; **ETL/ELT** pipelines with **Python**, **Google Apps Script, dbt** to transform and load to **Snowflake**.
- Reverse engineered data pipelines using **Tableau, Snowflake, dbt, fivetran, GCP, SAP, and SQL** for gap analysis to deploy stop-gap data pipelines and scope scalable & sustainable long-term cloud architecture process improvements.

Software Engineer | **Genentech** | *South San Francisco, CA | Jun 2022 – Dec 2022*

- Engineered scalable full-stack applications using **Python RESTful API**, **Vue.js**, and **Node.js** using **git** & **GitHub** for version control to streamline workflows for medical writing teams.
- Designed knowledge management platforms using **HTML, CSS, JavaScript** to incorporate **UI/UX** feedback.

Process Engineer | **Genentech** | *Vacaville, CA | Jun 2021 – Jun 2022*

- Developed automated data consolidation algorithms using **Python, R,** and **SQL**, reducing time by over 99%.
- Deployed data-driven process monitoring tools on Google Cloud Platform (**GCP**) to track KPIs.

SUPPLEMENTAL EXPERIENCE

Research Engineer | Dr. Alex Dunn | *Stanford, CA | Dec 2025 – Present*

- Computational de novo protein design of malaria target.

Founder | **Proprietary FinTech** | *Oakland, CA | Jun 2022 – Present*

- Optimized Python Algorithmic & Agentic trading frequency to Coinbase's allowable public **REST API** limit.

Laboratory Technician | **Canventa Life Sciences** | *Emeryville, CA | Jan 2023 – Oct 2023*

- Leveraged hands-on bioprocessing expertise to architect data systems & data models to physical reality.
- Modeled empirical data using **python (numpy, pandas)** to scale validated datasets over 300k datapoints.

Research Engineer | **UC Davis (Nandi, McDonald, Wan, Siegel Labs)** | *Davis, CA | Sep 2019 – Jun 2021*

- Optimized model using **Python (numpy, pandas) and numerical methods** to reduce costs by $63.2 Million.
- Quantified organoid growth using **Python (OpenCV, ImageJ, Fiji)** for image processing analysis.
- Published novel variants using **pyRosetta**, **pyMol**, and **Benchling** with wet-lab techniques to biomanufacture.

EDUCATION

Bachelor of Science, Biochemical Engineering University of California, Davis (Graduated) Davis, CA
Advanced Machine Learning with Agentic AI (on going)
AWS Cloud Technical Essentials (completed)