THOMAS TO

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

EXPERIENCE

Founder | Open Source Access | Oakland, CA | *Oct 2023 – Present*
- 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.
- **Github** Monolith for **CI/CD RAG** frontend on **AWS** (vercel), and **CT/CD Python ML models (scikit, pytorch, tensorflow**) on **Huggingface (FastAPI, Docker)**, with **vector database** for end-to-end cross platform ecosystem.
- **Deep learning (NLP)** of Kaggle & Huggingface datasets for keyword grouping to support new graduates to industry.

Founding Fullstack Engineer | **Canventa Life Sciences** | *Emeryville, CA | Oct 2023 – Present*
- Architected a revenue optimization system using **Snowflake** to integrate a predictive machine learning model 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).
- 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.
- Architected **ETL/ELT** pipelines with **Python** and **Google Apps Script** to digitize 5+ years of unstructured data.
- 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.

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.

Software Engineer | **Genentech** | *South San Francisco, CA | Jun 2022 – Dec 2022*
- Engineered scalable full-stack applications using backend **Python REST API**, frontend **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.

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.

TECHNICAL SKILLS

AI & Machine Learning: LLMs, RAG, NLP, Computer Vision, LangGraph, LangChain, PyTorch, TensorFlow, Scikit-learn, Hugging Face, AI SDK, n8n, Opal, Claude, cursor, codeWiki.
API & Web Frameworks: FastAPI, Django (DRF), Flask, GraphQL, OpenAPI (Swagger), OAuth2, Postman.
Middleware (CTMS/CRM/ERP): SNPGlue (SAP), MuleSoft (salesforce), Open API (CRIO), dbt, Fivetran, Zapier.
Databases & Backend: Snowflake, ETL/ELT Data Pipelines, Node.js, Django REST, PostgreSQL.
Cloud & IoT: GCP, AWS, Docker, Kubernetes, CI/CD, Git, GitHub, Atlassian, SAP, Raspberry Pi, AntMiner.
Languages: Python, SQL, R, Java, TypeScript, JavaScript (JSX), MATLAB, HTML/CSS, Google Apps Script.
Frontend & Visualization: Next.js, React.js, Vue.js, Tableau, Fiji, ImageJ, Python (matplotlib, seaborn, streamlit).

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)