

# THOMAS TO

Oakland, CA, 510-387-5408, [thomas.to.bcheme@gmail.com](mailto:thomas.to.bcheme@gmail.com), [LinkedIn](#), [Publication](#)

## EXPERIENCE

---

### **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 Retrieval Augmented Generative (**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 tribal knowledge.
- 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.
- Driving organizational efficiencies by scaling engineering excellence through junior mentorship and cross-departmental upskilling; communicating value and impact as a technical liaison for executive leadership.

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

- Optimized Python Algorithmic & Agentic trading frequency to Coinbase's allowable public **REST API** limit.
- Deployed an Exchange Trade Fund (ETF) solution to market gaps across banks' brokerages to Fidelity or Vanguard.
- FinTech hosted on secure, headless Raspberry Pi & AntMiner (**IoT**) integrated to **f2pool** for crypto mining algorithms.

### **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 unknown empirical data using data science methods, scaling validated datasets over 300k datapoints.
- Engineered in-house Material Management processes to reduce \$200k waste and prevented \$2M inventory stockout.
- Identified enterprise pain points equivalent to industry-wide from hands-on market research.

### **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.

## CERTIFICATIONS

---

HIPAA, Interview Kickstart Machine Learning with Agentic AI and Big Data, AWS Cloud Technical Essentials

- Independent study of repositories and courses without value-add certifications to support project development

## TECHNICAL SKILLS

---

**AI & Machine Learning:** LLMs, RAG, NLP, Computer Vision, LangGraph, LangChain, PyTorch, TensorFlow, Scikit-learn, Hugging Face, AI SDK, n8n, Opal.

**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 & DevOps:** 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.

## EDUCATION

---

**Bachelor of Science, Biochemical Engineering** University of California, Davis (Graduated)

Davis, CA

- McNair Scholar, AvenueE Scholar, Student Outreach Ambassador, Academic Tutor, Genentech Leader Exchange