

Jason (Jingqiao) Zhao

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EDUCATION

- **University of Michigan, Ann Arbor** Ann Arbor, MI
M.S. Bioinformatics · GPA: 4.00 / 4.00 2025 – Expected Dec 2026
 - *Relevant Coursework:* Parallel Computing, Deep Learning, GPU / CUDA Programming, Computational Systems
- **University of California, Berkeley** Berkeley, CA
B.A. Computer Science 2020 – 2024
 - *Relevant Coursework:* Data Structures, Algorithms, Operating Systems, Distributed Systems, Databases, Networking, Software Engineering, Machine Learning

SKILLS SUMMARY

Languages: Go, Python, SQL, TypeScript, Java, C, C++, JavaScript, Bash

Frameworks & Tools: gRPC, Protobuf, Thrift, REST APIs, FastAPI, React, PyTorch, SQLAlchemy, Docker, AWS, PostgreSQL, DynamoDB, Hive, ClickHouse, Spark, Grafana, Linux, Git, CI/CD

EXPERIENCE

- **TikTok** Bellevue, WA
Software Engineer Intern, Trust & Safety — Feed Safety Core Infrastructure May 2026 – Jul 2026
 - **Autorescan:** Designed, developed, and owned the recovery/rescan service of TikTok's new video-moderation core infrastructure: on average **~281K videos/day rescanned**, saving **~3,100 moderator-hours/day**. During a downstream outage, autorescan served as the primary recovery path — recovered **18M+ videos** and contained the incident, preventing P0 escalation.
 - **Primary On-Call:** Served as primary on-call (with senior SRE escalation) for core video moderation infrastructure during the legacy-to-new architecture migration — **4 distinct P0s across US, EU, and RoW in 7 days**; authored **RCAs** for all and **presented a detailed postmortem of a major 40-min global outage, with action items, to 50+ engineers** including skip-level leadership.
 - **Incident SOP:** Independently resolved a recurring **EU-region cascading failure**: identified the **critical under-provisioned model** and established the mitigation SOP during volatile traffic migration, cutting **MTTR** from **~2 hrs** (P0 incident) to **sub-20-min** (preemptive).
 - **AI Tooling:** Packaged autorescan operations into an **MCP server** with reusable **agent skills** adopted across the team for on-call automation; built automated failure reporting that surfaces cases landing in human review due to **model confusion** — a major tuning signal for next-gen moderation models.
 - **Patrol Agent:** Built and deployed a **Grafana-driven on-call agent** (ReAct loop) that monitors per-MQ rate limits and preemptively recommends tuning — the first iteration of the new Stability SWAT team's on-call master bot.
- **BigHat Biosciences** San Mateo, CA
Software Engineer Co-op — Full-Stack, LIMS & Research Infrastructure Jan 2025 – Aug 2025
 - **ReArray:** Built a full-stack **reagent-tracking and automated liquid-handling** module for a high-throughput Laboratory Information Management System (LIMS) — tracking any reagent in any well and auto-computing dilutions and array layouts across variable-sized, multi-plate workflows.
 - **Audit-Tail UI:** Built a **React/TypeScript + Python audit-trail UI over DynamoDB** surfacing deleted-record history for a large team of scientists, cutting audit lookups from **hours to seconds**.
 - **Serverless Pipelines:** Maintained **Lambda/Kinesis serverless event pipelines** and optimized CI/CD to sub-5-min dependency-pinned Docker releases, keeping experimental-event flow traceable across the LIMS.
 - **Scientific Computing:** Refactored scientific-computing modules for **picomolar-level precision**, eliminating rounding errors across **20K+ assay calculations/day**.
 - **ORM Standardization:** Led migration of **80+ legacy Pydantic and SQLAlchemy** models with inconsistent schemas to a unified ORM pattern, executing **zero-downtime** database migrations via **Alembic** to enable **FDA-compliant** data traceability.

RESEARCH

- **Welch Lab, University of Michigan** Ann Arbor, MI
Research Assistant, ML / Bioinformatics Sep 2025 – May 2026
 - **Representation Learning:** Built **transformer-based, cell-type-aware embeddings from protein language models (ESM-2, ProteinBERT)** with learned attention pooling and an **ontology-aware hierarchical loss over the cell-type DAG**.
 - **McCells & Scipher:** Owner of two model tracks (one CZI-sponsored), trained on **tens of millions of single-cell profiles** for hierarchical cell-type annotation.