

Martin Kim

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Software engineer with a passion for cloud infrastructure, MLOps, and research engineering, with biotech experience working with both ML and lab research scientists.

Experience	Software Engineer	2024 - now
	<i>Insitro - South San Francisco, CA</i>	
	<ul style="list-style-type: none">• Develop & maintain custom microscopy software for data acquisition & processing for internal scientist use driving drug discovery insights (SQL, NumPy, Pandas, PyTorch, Ray, AWS Batch).• Lead re-architecting of data extraction service processing 100 TBs of image data per month to reduce latency from hours to seconds and maintain 99% uptime (Docker, Grafana, Terraform, AWS Lambda).• Establish org-wide pattern for deploying GPU-accelerated model inference as a service on Kubernetes (FastAPI, AWS EKS, Terraform, GitHub Actions).• Integrate into adiposity therapeutic area as dedicated technical operations staff for ML and wetlab scientists.	
	Research Software Engineer	2022 - 2024
	<i>University of California, Berkeley (Yosef Lab) - Berkeley, CA</i>	
	<ul style="list-style-type: none">• Developed open-source package for deep probabilistic modeling of single-cell and spatial omics data with 50k+ downloads/month (PyTorch, Pyro, Lightning).• Composed modular pipelines for data processing, model training, and reproducible analyses (Dagster, GitHub Actions, and AWS).• Led collaboration with industry partner to fine-tune models and provide embeddings for widely-used data corpus consisting of 100M+ cells.• Provided technical support for research scientists in model training, tracking experiments, and writing performant code.	
	Research Software Intern	2022
	<i>Genentech Research & Early Development - South San Francisco, CA</i>	
	<ul style="list-style-type: none">• Implemented a method to efficiently query a single-cell RNA-seq database of 100M+ observations for gene signatures and vector embedding similarities.• Collaborated with research scientists in applying query methods to generate novel biological insights in immunology and oncology.	
Skills	General: Python, C, SQL, GitHub Actions, Linux, Docker, Grafana Infrastructure: Terraform, AWS, Kubernetes Machine learning: PyTorch, JAX, Ray, Lightning, NumPy, Pandas	
Education	B.S. Electrical Engineering & Computer Science B.S. Bioengineering <i>University of California, Berkeley</i>	2018 - 2022

Software	scvi-tools: Lead developer of a library for deep probabilistic analysis of single-cell and spatial omics data. 1.4k+ GitHub stars and 30k+ downloads/month. scverse: Core developer for software consortium focused on single-cell omics analysis. CZI CELLxGENE Census Models: Collaborating developer for model embeddings over the CELLxGENE Census data corpus.	2022 - 2024 2022 - 2024 2023 - 2024
Publications	P Boyeau, J Hong, A Gayoso, M Kim , JL McFaline-Figueroa, MI Jordan, E Azizi, C Ergen, N Yosef. "Deep generative modeling of sample-level heterogeneity in single-cell genomics". <i>Nature Methods</i> . C Ergen, V Valiollah Pour Amiri, M Kim , A Streets, A Gayoso, N Yosef. "Scvi-hub: an actionable repository for model-driven single cell analysis". <i>Nature Methods</i> . C Ergen, G Xing, C Xu, M Kim , M Jayasuriya, E McGeever, AO Pisco, A Streets, N Yosef. "Consensus prediction of cell type labels in single-cell data with popV". <i>Nature Genetics</i> . E Multrier, M Kim , P Boyeau, N Yosef, C Ergen. "Incorporating cell type ontology into probabilistic modeling for single-cell sequencing with muANVI". <i>Machine Learning in Computational Biology</i> (poster).	2025 2025 2024 2023
	HC Bravo, J Kancherla, G Heimberg, A Lun, V Wang, I Borozan, T Kuo, M Kim , S Lelong, V Obenchain. "The Single Cell Hub at Genentech, or, how to manage and query data from 100M cells". <i>CSHL Biological Data Science</i> .	2022
Grants	Chan Zuckerberg Initiative Essential Open Source Software for Science grant in support of scvi-tools (Key personnel).	2024