Qile Yang | *Curriculum Vitae*

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Education

2023-27	**B.A.** Computer Science, **B.A.** Data Science*, **Minor** Bioengineering, *University of California, Berkeley*
2022	**SAT Score:** 1510/1600
2020-23	**IB Diploma** Higher level Math AA, Biology, Chemistry, *International English Gymnasium Sodermalm*

Research Experience

2025–	ML Researcher, Song Lab, University of California, Berkeley.
2024	Bioinformatics/AI engineer, Generation Lab, Inc.
2023-25	Researcher and Bioinformatician, Conboy Lab, University of California, Berkeley.
2023	Researcher, Hallucinating Scaffolds team, iGEM at Berkeley. (Advisor: Chris Anderson)
2023–	Immunoinformatics/ML Researcher, Borch Lab, Washington University in St. Louis. (Advisor: Nicholas Borcherding)
2023	NGS Method developer, Sahlin Group, SciLifeLab / Stockholm University. (Advisor: Kristoffer Sahlin)
2022-23	Researcher, Karlsson-Hedestam/Murrell Lab, Karolinska Institute. (Advisor: Benjamin Murrell)

Awards & Honors

2023	Finalist, National Swedish Research fair (1/55 projects)
2023	Top 60, National Swedish Programming Olympiad Site
2022	Top 115, National Swedish Chemistry Olympiad (Fully Swedish)
2022	Double Admit to Karolinska Institute's summer research programs (1/5 admitted nationwide)
2022	Top school participant, Swedish Biology Olympiad (Fully Swedish)
2023	PostHS scholarship recipient, Equitable College Counselling
2022-23	Swedish National Debate Team member (5 national debating awards)

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*With Domain Emphasis of *Computational Methods in Molecular and Genomic Biology*

Publications

Journal Articles

J1. **Yang, Qile**, Safina, K. R., Nguyen, K. D. Q., Tuong, Z. K. & Borcherding, N. scRepertoire 2: Enhanced and efficient toolkit for single-cell immune profiling. *PLOS Computational Biology* **21,** 1–10. https://doi.org/10.1371/journal.pcbi.1012760 (June 2025).
   – Media: ASCA, *Chinese Software Developer Network* [In Chinese], *Jianshu* [In Chinese]
   – BioRxiv preprint: https://doi.org/10.1101/2024.12.31.630854.

J2. **Yang Qile**. APackOfTheClones: Visualization of clonal expansion with circle packing. *Journal of Open Source Software* **9,** 6868. https://doi.org/10.21105/joss.06868 (2024).
   – Media: *R views (by Rstudio)*, *R-bloggers*, *Zhihu* [In Chinese], *360doc* [In Chinese], *Tencent* [In Chinese].

J3. Cruz, J. M., Yeung, H., Alzalzalee, R., **Yang, Qile**, Kabir, H., McDonough, S., Mei, X., Conboy, M. J. & Conboy, I. M. In old mice, Exercise Induces Inflammation and Fibrosis unless Alk5-inhibitor and Oxytocin are used. *Journal of Cellular Physiology* **240,** e70054. https://onlinelibrary.wiley.com/doi/abs/10.1002/jcp.70054 (2025).

Working papers

W1. Cruz, J. M., Alzalzalee, R., Yeung, H., Mahmood, Z., **Yang, Qile**, Morshedian, N., Conboy, M. J., Mazahery, A. R., Nevado, J. B. & Conboy, I. M. *Plasma dilution after myocardial infarction rescues cardiac repair, heart performance, and promotes recovery of motor function and endurance in old mice* Manuscript Under Review. 2025.

W2. Borcherding, N., Sun, B., DeNardo, D., Mudd, P. A., Ellebedy, A., **Yang, Qile** & Brestoff, J. R. *Ibex: Deep autoencoders for single-cell BCR sequencing* Manuscript to be submitted. 2025. https://github.com/BorchLab/Ibex.

Presentations

Posters

P1. **Yang, Qile**, Sahlin, K. & Murrell, B. *KmerGMA: A seed-based approach for fast homology searching* Swedish National Science Fair 2023 Finals (Södertälje, Sweden). Apr. 2023. https://qile0317.github.io/KmerGMA.jl/stable/.

Demonstrations & Tutorials

D1. **Yang, Qile** & Murrell, B. *Discovery of Novel Camelid Germline Immunoglobulin Alleles* Karolinska Institute's summer research program (SoFo) 2022 (Stockholm, Sweden). Aug. 2022. https://github.com/Qile0317/SoFoCompBio22/blob/main/FinalPresentation.pptx.

D2. **Yang, Qile** & et al. *Final Presentation: Hallucinating Scaffolds Team* iGEM at Berkeley All Hands 3 (Berkeley CA, USA). Dec. 2023.

Selected Media

2025   Association of Single Cell Analysis (ASCA), 📍 scRepertoire 2: Enhanced and efficient toolkit for single-cell immune profiling [J1]
2024   Chinese Software Developer Network, Immune repertoire analysis - scRepertoire [in Chinese] [J1]
2023   R-views (by RStudio), May 2023: "Top 40" New CRAN Packages [J2]

Relevant Coursework

Computational Biology: Introduction to Computational Molecular and Cell Biology | Machine Learning, Statistical Models, and Optimization for Molecular Problems

Machine Learning / Statistics: Introduction to Artificial Intelligence | Principle & techniques of Data Science | Human Contexts and Ethics of Data

Biology / Chemistry: Chemical Structure and Reactivity | Organic Chemistry Laboratory | Introduction to Bioengineering | Careers in Biotechnology

Mathematics: Linear Algebra and Differential Equations | Multi-variable Calculus | Discrete Mathematics and Probability Theory | Introduction to Probability and Statistics

Computer Science: Structure and Interpretation of Computer Programs | Data Structures | Introduction to Competitive Programming

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