

# Qile Yang | *Curriculum Vitae*

qile [dot] yang [at] berkeley [dot] edu



## 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 Borcharding](#))  
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. & Borcharding, 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**, Morshedien, 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. Borcharding, 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.

### 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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