

# **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*  
2020-23      **IB Diploma** Higher level Math AA, Biology, Chemistry, *International English Gymnasium Södermalm*

## **Research Experience**

- 2025–      ML Researcher, [Yun S. Song Lab](#), [Innovative Genomics Institute](#) & Berkeley Artificial Intelligence Research  
2023–      Computational Immunology Researcher, Borch Lab, Washington University in St. Louis. (Advisor: [Nicholas Borcherding](#))  
2024      Bioinformatics & AI engineer, [Generation Lab, Inc. \(YC S24\)](#)  
2023-25      Researcher & Bioinformatician, Conboy Lab, University of California, Berkeley & [QB3](#).  
2023      Researcher, Hallucinating Scaffolds team, [iGEM at Berkeley](#). (Advisor: [Chris Anderson](#))  
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**

- 2025      Dean's List - UC Berkeley College of Statistics, Data Science, and Society  
2023      Finalist, National Swedish Research fair ([1/55](#))  
2023      Top 60, National Swedish Programming Olympiad Site  
2022      Top 115, National Swedish Chemistry Olympiad  
2022      Double Admit to Karolinska Institute's summer research programs (1/5 admitted nationwide)  
2022      Top school participant, Swedish Biology Olympiad

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\*With [Domain Emphasis](#) of *Computational Methods in Molecular and Genomic Biology*

## Fellowships & Funding

2025	Top 20 Global Fellow, competitive BioTech/AI entrepreneurship program; eligible for mid six-figure funding (< 0.1% acceptance rate)
2025	Recipient, Anna Whitlock Scholarship, <a href="#">Anna Whitlock Memorial Foundation [In Swedish]</a>
2023	Recipient, PostHS scholarship, <a href="#">Equitable College Counselling</a>

## Publications

† → Equal contribution

### Journal Articles

- J1. 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> (June 2025).
- J2. **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>.
- J3. **Yang Qile**. APackOfTheClones: Visualization of clonal expansion with circle packing. *Journal of Open Source Software* **9**, 6868. <https://doi.org/10.21105/joss.06868> (Nov. 2024).
  - Media: [R views \(by Rstudio\)](#), [R-bloggers](#), [Zhihu \[In Chinese\]](#), [360doc \[In Chinese\]](#), [Tencent \[In Chinese\]](#).

### 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., **Yang, Qile**, Sun, B., DeNardo, D., Mudd, P. A., Ellebedy, A. & 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 Finals (Södertälje, Sweden). Apr. 2023. <https://qile0317.github.io/KmerGMA.jl/stable/>.

- P2. **Yang, Qile** & Borcherding, N. *Reimagining Single Cell BCR Modeling: An Interpretable, Biochemically-Informed Framework* Cal Undergraduate Bioengineering Symposium. Dec. 2025. <https://igem.studentorg.berkeley.edu/cubs/>.

## Demonstrations & Tutorials

- D1. **Yang, Qile** & Murrell, B. *Discovery of Novel Camelid Germline Immunoglobulin Alleles* Karolinska Institute's Summer Research Program in Computational Biology (Stockholm, Sweden). Aug. 2022. <https://github.com/Qile0317/SoFoCompBio22>.
- D2. **Yang, Qile** et al. *Final Presentation: Hallucinating Scaffolds Team iGEM at Berkeley All Hands 3* (Berkeley CA, USA). Dec. 2023.

## Software

- S1. Yang, Q. *Einops for R: Flexible, Powerful, and Readable Tensor Operations* The Comprehensive R Archive Network. 2025. <https://qile0317.github.io/einops/>.
- S2. Yang, Q. *FastUtils: Fast, Readable Utility Functions* The Comprehensive R Archive Network. 2025. <https://qile0317.github.io/FastUtils/>.
- S3. Lin<sup>†</sup>, X., Lo<sup>†</sup>, K. & **Yang<sup>†</sup>, Qile**. *OKaiLoRa: a no-code platform for training, running, and sharing machine learning models in healthcare* Devpost. 2024. <https://devpost.com/software/okailora-ai>.

## Selected Media Coverage

2025	Association of Single Cell Analysis (ASCA),  scRepertoire 2: Enhanced and efficient toolkit for single-cell immune profiling [J2]
2024	Chinese Software Developer Network, Immune repertoire analysis - scRepertoire [in Chinese] [J2]
2023	R-views (by RStudio), May 2023: "Top 40" New CRAN Packages [J3]

## Selected Professional Organizations

2025–	Operations & Tech Lead, <a href="#">Computational Biology @ Berkeley</a>
2023–	Member, <a href="#">Bioconductor Developer Community</a>
2025–	Member, <a href="#">Gerontological Society of America (GSA)</a>
2025–	Member, <a href="#">The Antibody Society</a>
2025–	Member, <a href="#">Boston Protein Design and Modelling Club (BPDMC)</a>

## Other Distinctions

2023	Swedish National Debate Team member, <a href="#">Swedish Schools Debating Organization</a>
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2023	World Schools Debating Championship Sponsorship (Withdrew due to external constraints), <a href="#">The Scholarship Fund in Memory of Ellinor Carlsson [In Swedish]</a>
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## Relevant Coursework

\* → Taking currently

**Computational Biology:** Computational Single-Cell and Systems Immunology | Introduction to Computational Molecular and Cell Biology | Machine Learning, Statistical Models, and Optimization for Molecular Problems | Computational Functional Genomics | Introduction to Machine Learning for Computational Biology\* | Algorithms for Computational Biology\* | Frontiers in Microbial Systems Biology\*

**Machine Learning / Statistics:** Introduction to Machine Learning | Introduction to Artificial Intelligence | Concepts of Probability | Principle & techniques of Data Science

**Biology / Chemistry:** General Genetics\* | Chemical Structure and Reactivity | Organic Chemistry Laboratory | Introduction to Bioengineering | Careers in Biotechnology | Ethics in Science and Engineering

**Mathematics:** Real Analysis\* | 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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Last updated: January 13, 2026