

Curriculum Vitae

Name Guangyuan(Frank) Li
Address Division of Biomedical Informatics, 3333 Burnet Avenue, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229
Email li2g2@mail.uc.edu
Blog <https://frankligy.medium.com/>
GitHub <https://github.com/frankligy>

Personal Statement

I am currently a third-year Ph.D. student majoring in biomedical informatics at Cincinnati Children's Hospital Medical Center (CCHMC). My Ph.D. training focuses on novel computational algorithms and pipeline development in single-cell genomics and cancer transcriptome. Before joining the graduate school, I obtained my Bachelor's degree in biology and got involved in a Neoantigen preclinical study when conducting my undergraduate internship at Beijing Genomics Institute (BGI). My end goal is to combine both my computational training with my cancer biology enthusiasm to facilitate the discoveries of improved cancer therapy.

Skill Sets

1. *Deep Learning (Pytorch, Tensorflow, Keras) and probabilistic modeling.* [[Paper](#), [Code](#)]
2. *Single-Cell Multimodal analysis (scRNA-Seq, CITE-Seq, scATAC-Seq, Multiome, TEA-Seq, Genotyping, Epigenetics, TCR, Spatial).* [[Paper](#), [Code](#)]
3. *Neoantigen pipeline, Immune Repertoire, Cancer Immunotherapy* [[Poster](#), [Code](#)]
4. *Gene Regulatory Network, Splicing Regulatory Network* [[Poster](#)]
5. *Web development (HTML, CSS, JavaScript, Flask, Dash, MySQL).* [[Demo1](#), [Demo2](#), [Code1](#), [Code2](#)]
6. *Python, Linux, R, Matlab, C, Data Visualization.* [[Tutorials authored by me](#), [Code](#)]
7. *Code Documentation* [[Example1](#), [Example2](#)]
8. *Docker, Singularity* [[Example](#)]
9. *Quick and continual Learner.*

Education

08/2019 - present PhD student, Division of Biomedical Informatics
Cincinnati Children's Hospital Medical Center, United States

09/2018 - 04/2019 Exchange Student, Biodesign Institute
Arizona State University, United States

09/2015 - 06/2019 Bachelor of Science, Division of Life Science
Wuhan University, China

Working Experience

05/2022 - present Bioinformatics Intern, Sanofi, Cambridge, MA, United States

- Evaluating Spatial Deconvolution method on 10x Visium data
- Implementing Spatial Deconvolution framework on AWS server

03/2017 - 06/2017 Research Intern, Beijing Genome Institute (BGI), Shenzhen, China

- Neoantigen Autologous T cell transfer therapy preclinical study
- Single-cell data analysis

Publication

1. **Li, Guangyuan***, Balaji Iyer, V. B. Surya Prasath, Yizhao Ni, and Nathan Salomonis. 2021. "DeepImmuno: Deep Learning-Empowered Prediction and Generation of Immunogenic Peptides for T-Cell Immunity." ***Briefings in Bioinformatics*** 22 (6). <https://doi.org/10.1093/bib/bbab160>.
2. **Li, Guangyuan***, Baobao Song, H. L. Grimes, V. B. Surya Prasath, and Nathan Salomonis. 2021. "scTriangulate: Decision-Level Integration of Multimodal Single-Cell Data." ***bioRxiv***. <https://doi.org/10.1101/2021.10.16.464640>.
3. Jin, Kang, Daniel Schnell, **Guangyuan Li**, Nathan Salomonis, V. B. Surya Prasath, Rhonda Szczesniak, and Bruce J. Aronow. n.d. "CellDrift: Inferring Perturbation Responses in Temporally-Sampled Single Cell Data." ***bioRxiv***. <https://doi.org/10.1101/2022.04.13.488194>.

Conference Presentation

1. **Guangyuan Li**, Nathan Salomonis. *scTriangulate: Decision-Level Integration of Multimodal Single-Cell Data*. Oral presentation at **Chan Zuckerberg Initiative (CZI) Single Cell Annual Meeting**; 2021 Oct 16th; Zoom
2. **Guangyuan Li**, Matthew Weirauch, Emily Miraldi, Nathan Salomonis. *Context-specific splicing regulatory network inference from large-scale alternative splicing data*. Poster presentation at **Cold Spring Harbor Laboratory (CSHL) System Biology Conference**; 2021 Mar 9-12th; New York (United States)
3. **Guangyuan Li**, Nathan Salomonis, *SNAF: Accurate and compatible computational framework for identifying splicing derived neoantigens*. Poster presentation at **American Association of Cancer Research (AACR) Annual Meeting**; 2022 April 8-13th; New Orleans (United States)