

Curriculum Vitae

Name Guangyuan(Frank) Li
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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 cancer immunotherapy 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 development, Immune Repertoire, Cancer Immunotherapy* [[Code](#)]
4. *Web development (HTML, CSS, JavaScript, Flask, Dash, MySQL).* [[Demo1](#), [Demo2](#), [Code1](#), [Code2](#)]
5. *Python, Linux, R, Matlab, C, Data Visualization.* [[Tutorials authored by me](#), [Code](#)]
6. *Code Documentation* [[Example1](#), [Example2](#)]
7. *Docker, Singularity* [[Example](#)]
8. *Quick and continual Learner.*

Education

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

09/2018 - 04/2019 Exchange Student, Biodesign Institute
Arizona State University, United States
Laboratory of Professor Wei Liu, PhD

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

Research Experience

08/2019 - present Laboratory of Professor Nathan Salomonis, Ph.D. (CCHMC), Developing

computational methods in single-cell genomics and alternative splicing data

09/2018 - 04/2019 Laboratory of Professor Wei Liu, Ph.D. (Arizona State University), Solving Crystal structures of GPCR-G complex

03/2018 - 06/2018 BGI Research, Novel Cancer immunotherapy and preclinical trials

11/2017 - 11/2018 International Genetically Engineered Machine (IGEM) competition (Wuhan University), Synthetic Biology, an engineered bacteria to clean wastewater

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. 2022 "CellDrift: Inferring Perturbation Responses in Temporally-Sampled Single Cell Data." ***bioRxiv***. <https://doi.org/10.1101/2022.04.13.488194>.