

Stanford



Siyu He

Postdoctoral Scholar, Biomedical Data Sciences

Bio

BIO

I am a postdoctoral fellow in the Department of Biomedical Data Science at Stanford University, where I am advised by Dr. James Zou and Dr. Stephen Quake.

My research interests lie at the intersection of statistical machine learning, computational biology, stem cell engineering, and disease modeling. My mission is to leverage AI methodologies in biomedicine to accelerate our understanding of diseases. I earned my PhD in Biomedical Engineering from Columbia University, where I am co-advised by Dr. Kam Leong and Dr. Elham Azizi. I hold a Bachelor's degree in Physics from Xi'an Jiaotong University.

STANFORD ADVISORS

- Stephen Quake, Postdoctoral Research Mentor
- James Zou, Postdoctoral Faculty Sponsor

LINKS

- My website: <https://stanford.edu/~siyuhe/>

Publications

PUBLICATIONS

- **Benchmarking cell type and gene set annotation by large language models with AnnDictionary.** *Nature communications*
Crowley, G., Quake, S. R.
2025; 16 (1): 9511
- **Squidiff: Predicting cellular development and responses to perturbations using a diffusion model.** *bioRxiv : the preprint server for biology*
He, S., Zhu, Y., Tavakol, D. N., Ye, H., Lao, Y. H., Zhu, Z., Xu, C., Chauhan, S., Garty, G., Tomer, R., Vunjak-Novakovic, G., Zou, J., Azizi, et al
2025
- **Quantifying large language model usage in scientific papers.** *Nature human behaviour*
Liang, W., Zhang, Y., Wu, Z., Lepp, H., Ji, W., Zhao, X., Cao, H., Liu, S., He, S., Huang, Z., Yang, D., Potts, C., Manning, et al
2025
- **Spatial multi-omics and deep learning reveal fingerprints of immunotherapy response and resistance in hepatocellular carcinoma.** *bioRxiv : the preprint server for biology*
Wu, Z., Boen, J., Jindal, S., Basu, S., Bieniosek, M., He, S., LaPelusa, M., Mayer, A. T., Kaseb, A. O., Zou, J., Sharma, P., Trevino, A. E.
2025
- **Encoding spatial tumour dynamics with Starfysh** *NATURE REVIEWS CANCER*
He, S.
2024

- **Starfish integrates spatial transcriptomic and histologic data to reveal heterogeneous tumor-immune hubs** *NATURE BIOTECHNOLOGY*
He, S., Jin, Y., Nazaret, A., Shi, L., Chen, X., Rampersaud, S., Dhillon, B. S., Valdez, I., Friend, L. E., Fan, J., Park, C. Y., Mintz, R. L., Lao, et al
2024
- **Human vascular organoids with a mosaicAKT1mutation recapitulate Proteus syndrome.** *bioRxiv : the preprint server for biology*
He, S., Zhu, Y., Chauhan, S., Tavakol, D. N., Lee, J. H., Berris, R. B., Xu, C., Lee, J. H., Lee, C., Cai, S., McElroy, S., Vunjak-Novakovic, G., Tomer, et al
2024