Litian Han

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HELLO! THIS IS ME.

- I'm a postgraduate student in the field of stomatology.
- I have strong background in programming, bioinformatics, and biology. I'm intereted in using data and statistics way to solving bilogical problems.
- I'm experienced in:
  - Single-cell RNA sequencing
  - 3D genomics
  - Statistics

EDUCATION

★; **Master**, Wuhan University, Wuhan, China
September 2022 - June 2025
Major: Stomatology

★; **Bachelor**, Wuhan University, Wuhan, China
September 2017 - June 2022
Major: Stomatology

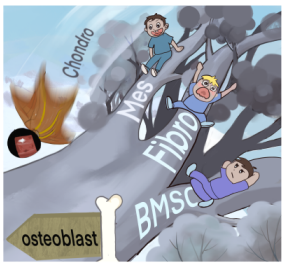
HIGHLIGHT PUBLICATION

Presented below is my paper as the lead author.

Trajectory-centric framework TrajAtlas reveals multi-scale differentiation heterogeneity among cells, genes, and gene module in osteogenesis.

Plos Genetics, October 7, 2024.

I developed a framework for single-cell data analysis, focusing on trajectory. Utilizing multiple novel algorithms, it enables the exploration of multi-scale heterogeneity during differentiation across large-scale atlases. Applied in the field of bone development, it identifies four pathways towards osteogenesis and related gene and gene module dynamics.



OTHER PUBLICATIONS

Below are other papers I co-authored:

Zhao Q, Wang J, Qu S, Gong Z, Duan Y, **Han L**, et al. Neuro-Inspired Biomimetic Microreactor for Sensory Recovery and Hair Follicle Neogenesis under Skin Burns. *ACS Nano*. 2023 Nov 28;17(22):23115–31.

Wang J, Zhao Q, Fu L, Zheng S, Wang C, **Han L**, et al. CD301b+ macrophages mediate angiogenesis of calcium phosphate bioceramics by CaN/NFATc1/VEGF axis. *Bioactive Materials*. 2022;15:446–55.

Cai W, Zhang J, Yu Y, Ni Y, Wei Y, Cheng Y, **Han L**, et al. Mitochondrial Transfer Regulates Cell Fate Through Metabolic Remodeling in Osteoporosis. *Advanced Science*. 2023 Feb;10(4):2204871.

SKILLS

Research	Genetics, Bioinformatics, Development
Communication	Effective Data Visualisation, Academic Writing, Shiny, Presentations, Reproducibility
Programming	R (Excellent), Python (Excellent), bash (Excellent), LATEX (If-need-be), MYSQL (If-need-be), JAVA (Beginner)
Statistics	Bayes, Linear regression, Machine learning
Languages	Chinese (Native), English (Fluent), Deutsch (None at all)

INTERESTS

Reading
I have a passion for reading and have explored a diverse array of books across various fields. Feel free to explore **my book collection** if you're interested!

PROJECTS

TrajAtlas

GitHub Docs PyPI Paper Shiny Data Intro

This is my inaugural project focusing on single-cell RNA sequencing and development. While it may not be perfect, I believe it reflects my evolving thoughts on data, genomics, and biology, marking a promising beginning.

September 2022 - May 2024

LinkSet

GitHub Docs Intro

Recently, I'm working on integrating epigenomic data and single-cell data to identify long-distance enhancers. During this process, I discovered a gap in existing data structures for managing promoter-enhancer interactions. To address this, I developed a lightweight yet powerful R package designed to efficiently handle all aspects of enhancer-gene regulation.

September 2024 - Present