Xi Luo

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Education

Southern University of Science and Technology   *2022-2025*
Master of Science in Biology

- GPA: 3.65/4.0
- Supervisor: Dr. Chen Xi

Southern University of Science and Technology   *2018-2022*
BS in Bioinformatics

- GPA: 3.3/4.0
- Supervisor: Dr. Chen Xi
- Exempted from entrance examination for Master's program, granted direct admission to Master's program based on academic excellence.

Peking University Shenzhen Graduate School   *Mar, 2024 - Jul, 2024*
Semester Exchange

- Courses: *Omics Data and Its Applications*
- GPA: 4.0/4.0

University of California, Berkeley   *Jan, 2020 - Jun, 2020*
Semester Exchange

- Courses: *Biochemistry: Pathways, Mechanism, and Regulation* (Michael Marletta)
- Courses: *Quantitative Methods in Biology* (Rasmus Nielsen)

Skills

1/3 Bioinformatics

- **Single-Cell Transcriptomics:**
  - Expertise in single-cell RNA sequencing (scRNA-seq) analysis, including STARsolo + Seurat workflows for data preprocessing, clustering, and visualization.
  - Proficient in pseudobulk differential expression analysis and pathway enrichment analysis using GSEA and `clusterProfiler`.
- **Single-Cell Epigenomics:**
  - Skilled in scATAC-seq analysis with Snakemake-driven alignment and peak calling, performing comprehensive quality control (QC), and downstream analysis using Signac.
- **Gene Regulatory Networks Inference:**
  - Proficient in using SCENIC to predict transcription factors (TFs) and build gene regulatory networks from single-cell RNA-seq data, providing deeper insights into gene regulation and cellular heterogeneity.

2/3 Scientific Writing & Data Visualisation

- **Thesis and Peer Review:** Master's thesis received top evaluation from two blind reviewers, both awarding the highest rating (A), demonstrating the quality and rigor of my scientific writing and research.
- **Adobe Illustrator:** Expertise in creating publication-ready figures, schematics, and conference posters. Skilled in producing high-quality visual representations of complex data, enhancing clarity and communication of scientific results.
- **LaTeX/Beamer:** Proficient in writing professional manuscripts and designing slide decks using LaTeX and Beamer, with a focus on meticulous typography, layout, and document structure for clarity and readability.

3/3 Programming

- **Languages:** R, Python, Java, MATLAB, Bash

- **Data Science & AI:** pandas, NumPy, scikit-learn; implemented CNNs, data structures & algorithms (DSAA); authored report on *AI4Science* trends
- **Workflow & Deployment:** Snakemake, Docker for reproducible pipelines; web apps with R Shiny

Research Experience

Graduate Research, SUSTech *2022-2025*

- Collaborated with Dr. Wang Tianren (HKU Shenzhen Hospital) to study molecular differences in embryos from mothers of varying ages. Performed scRNA-seq analysis on human post-implantation embryos and analyzed large-scale single-cell datasets.
- Conducted single-cell multiomics analysis, integrating scRNA-seq and scATAC-seq data.

Undergraduate Research, SUSTech *2021-2022*

- Built an interactive single-cell transcriptome analysis web tool (R Shiny) for non-programmer biologists; open-sourced on GitHub.

Conferences and Poster Presentations

- The Second International Conference on Single-cell and Spatial Omics *Mar, 2024*

- The Fourth Annual Meeting of EMBL Alumni in China *Dec, 2023*

- National Key Research on Biotechnology and Information Technology: Cell Atlas Project *Feb, 2023*

- Poster: Molecular Mechanisms Underlying Age-Related Changes in Early Post-Implantation Human Embryo Development,SUSTech *Nov, 2023*

Work Experience

App Development Team Leader 2019-2020

- Founded and led an interdisciplinary app development team. Hired and managed CS major and Business major students. Gained valuable experience in entrepreneurship and team management

Language Proficiency

TOEFL iBT Score: 96