

ZIQI ZHANG

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EDUCATION

Georgia Institute of Technology, GA, USA

Sep 2020 - present

Ph.D. in Computational Science and Engineering

- Advisor: Prof. Xiuwei Zhang

Georgia Institute of Technology, GA, USA

Sep 2019 - present

Master of Electrical and Computer Engineering

- Advisor: Prof. Xiuwei Zhang

Beihang University, Beijing, China

Sep 2015 - July 2019

Bachelor of Electronic and Information Engineering

- Beidou Honor Class
- Thesis advisor: Prof. Huaping Xu

PUBLICATION

Journal & Conference papers

1. **Ziqi Zhang**, Haoran Sun, Ragunathan Mariappan, Xinyu Chen, Xi Chen, Mika S Jain, Mirjana Efremova, Sarah A Teichmann, Vaibhav Rajan, Xiuwei Zhang. “scMoMaT jointly performs single cell mosaic integration and multi-modal bio-marker detection”, *Nature Communication*, 2023
2. **Ziqi Zhang**, Chengkai Yang, and Xiuwei Zhang. “scDART: integrating unmatched scRNA-seq and scATAC-seq data and learning cross-modality relationship simultaneously” *Genome Biology*, 2022
3. **Ziqi Zhang** and Xiuwei Zhang. “Inference of high-resolution trajectories in single-cell RNA-seq data by using RNA velocity”, *Cell Reports Methods*, 2021
4. Vaibhav Rajan, **Ziqi Zhang**, Carl Kingsford, and Xiuwei Zhang. “Maximum likelihood reconstruction of ancestral networks by integer linear programming”, *Bioinformatics*, 2021

Preprints & Working papers

1. **Ziqi Zhang**, Xinye Zhao, Peng Qiu, and Xiuwei Zhang. “scDisInFact: disentangled learning for integration and prediction of multi-batch multi-condition single cell RNA-sequencing data”, *submitted to RECOMB*, 2022
2. **Ziqi Zhang**, Jongseok Han, Le Song, and Xiuwei Zhang. “Inferring cell-specific gene regulatory networks from single cell gene expression data”, *BioRxiv*, 2022
3. Hechen Li, **Ziqi Zhang**, Michael Squires, Xi Chen, Xiuwei Zhang, “scMultiSim: simulation of multi-modality single cell data guided by cell-cell interactions and gene regulatory networks”, *BioRxiv*, 2022
4. **Ziqi Zhang** and Xiuwei Zhang. “Velosim: Simulating single cell gene-expression and RNA velocity”, *BioRxiv*, 2021

Workshop

1. **Ziqi Zhang** and Xiuwei Zhang. “Integrating unmatched scRNA-seq and scATAC-seq data and learning cross-modality relationship simultaneously” **Spotlight**, *16th Machine Learning in Computational Biology (MLCB)*, 2021
2. **Ziqi Zhang**, Haoran Sun, Ragunathan Mariappan, Xi Chen, Mika S Jain, Mirjana Efremova, Sarah A Teichmann, Vaibhav Rajan, Xiuwei Zhang. “Integrating unpaired scRNA-seq and scATAC-seq with unequal cell type compositions” *ICML workshop on Computational Biology*, 2021

Presentations

1. Talk: *scDisInFact: the disentangled learning for integration and prediction of multi-batch multi-condition single-cell RNA sequencing data*, HotCSE, School of Computational Science and Engineering, Georgia Institute of Technology, 2022
2. Talk: *scMoMaT: Multimodal Data Integration Software*, AWSOM-Atlanta Workshop on Single-cell Omics, 2022
3. Spotlight presentation: *Integrating unmatched scRNA-seq and scATAC-seq data and learning cross-modality relationship simultaneously*, MLCB, 2021
4. Flash talk: *Learning latent embedding of multi-modal single cell data and cross-modality relationship simultaneously*, CSHL, 2021
5. Poster presentation: *CeSpGRN: Inferring cell-specific gene regulatory networks from single cell gene expression data*, RECOMB, 2022
6. Poster presentation: *scMoMaT: Integrating arbitrary number of single-cell multi-omics matrices using matrix-trifactorization*, USC-QCB, 2022
7. Poster presentation: *Inference of multiple trajectories in single-cell RNA-Seq data from RNA-velocity*, VIB, 2020
8. Poster presentation: *Inference of multiple trajectories in single-cell RNA-Seq data from RNA-velocity*, RSGDREAM, 2020
9. Poster presentation: *Inference of multiple trajectories in single-cell RNA-Seq data from RNA-velocity*, CSHL-Asia, 2020
10. Oral presentation: *Computational methods to study cell mechanisms from single cell data*, Georgia Scientific Computing Symposium (GSCS), 2020

TEACHING

Courses

1. **Head Teaching Assistant:** *CSE 6140 Algorithm* 2021Fall
2. **Teaching Assistant:** *CSE 8803 Machine learning in Computational Biology* 2021Spring
3. **Teaching Assistant:** *CSE 6140 Algorithm* 2020Fall

Advisee

1. **Xinye Zhao:** graduate student in Electrical and Computer Engineering Nov 2021-Oct 2022
Project: *scDisInFact: disentangled learning for integration and prediction of multi-batch multi-condition single cell RNA-sequencing data*
2. **Xinyu Chen:** graduate student in Bioengineering August 2021-Nov 2021
Project: *scMoMaT: Mosaic integration of single cell multi-omics data using matrix tri-factorization*
3. **Jongseok Han:** graduate student in Computational Science and Engineering Jun 2021-Nov 2021
Project: *Inferring cell-specific gene regulatory networks from single cell gene expression data*
4. **Chengkai Yang:** undergraduate student in Computer Science Jun 2020-Jan 2021
Project: *Learning latent embedding of multi-modal single cell data and cross-modality relationship simultaneously*

AWARD

Ph.D. in Georgia Tech

1. Thanks a teacher award *as teaching assistant in CSE6140* Nov 2020

Undergraduate in Beihang University

1. Outstanding Undergraduate in Beihang University 2019
2. Chinese Graduate Entrance Exam Waiver 2019

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| 3. Learning Merit Scholarship in Beihang University | 2018 |
| 4. Scholarship for student excellent in Science and Technology competition | 2018 |
| 5. The Third Prize of National Undergraduate Electronic Design Contest | 2017 |
| 6. The First Prize of BUAA Physics competition | 2015 |

SERVICE

Journal reviewer:	<i>Bioinformatics, Cell Reports Methods, BMC Bioinformatics, BMC Endocrine Disorders</i>
Conference reviewer:	<i>RECOMB 2022, ISMB 2022</i>

SKILLS

Languages:	<i>Chinese, English</i>
Programming:	<i>Python, Pytorch, R, LaTeX, Linux, MATLAB, C++</i>