ZIQI ZHANG

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EDUCATION

Georgia Intitute of Technology, GA, USA *Sep 2020 - present*
Ph.D. in Computational Science and Engineering
- Advisor: Prof. Xiuwei Zhang

Georgia Intitute 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", *BioRxiv*, 2023
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 worshop 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*, AWSOM-Atlanta Workshop on Single-cell Omics, 2023 [**Best oral presentation award**]
2. Poster presentation: *scDisInFact: the disentangled learning for integration and prediction of multi-batch multi-condition single-cell RNA sequencing data*, RSGDREAM, 2022
3. 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
4. Talk: *scMoMaT: Multimodal Data Integration Software*, AWSOM-Atlanta Workshop on Single-cell Omics, 2022
5. Talk: *Integrating unmatched scRNA-seq and scATAC-seq data and learning cross-modality relationship simultaneously*, MLCB, 2021 [**Spotlight presentation**]
6. Flash talk: *Learning latent embedding of multi-modal single cell data and cross-modality relationship simultaneously*, CSHL, 2021
7. Poster presentation: *CeSpGRN: Inferring cell-specific gene regulatory networks from single cell gene expression data*, RECOMB, 2022
8. Poster presentation: *scMoMaT: Integrating arbitrary number of single-cell multi-omics matrices using matrix-trifactorization*, USC-QCB, 2022
9. Poster presentation: *Inference of multiple trajectories in single-cell RNA-Seq data from RNA-velocity*, VIB, 2020
10. Poster presentation: *Inference of multiple trajectories in single-cell RNA-Seq data from RNA-velocity*, RSGDREAM, 2020
11. Poster presentation: *Inference of multiple trajectories in single-cell RNA-Seq data from RNA-velocity*, CSHL-Asia, 2020
12. Flash talk: *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 andcross-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*
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: *Patterns, Bioinformatics, Bioinformatics advance, Cell Reports Methods, BMC Bioinformatics, BMC Endocrine Disorders*

Conference reviewer: *ISMB2023, RECOMB 2022, ISMB 2022*

SKILLS

Languages: *Chinese, English*

Programming: *Python, Pytorch, R, LaTex, Linux, MATLAB, C++*