ZHONGXIAO LI

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ACADEMIC POSITIONS

Stanford University   Feb 2025 –
Postdoctoral Fellow   Stanford, USA
  - Advisor: Professor Ruijiang Li

EDUCATION

King Abudullah University of Science and Technology (KAUST)   Jan 2020 – Dec 2024
Ph.D. in Computer Science   Thuwal, Saudi Arabia
  - Advisor: Professor Xin Gao
King Abudullah University of Science and Technology (KAUST)   Aug 2018 – Jan 2020
M.S. in Computer Science   Thuwal, Saudi Arabia
Cumulative GPA: 3.82/4.00
Southern University of Science and Technology (SUSTech)   Aug 2014 – Jul 2018
B.S. in Bioinformatics   Shenzhen, China
Cumulative GPA: 3.87/4.00

PUBLICATIONS

Link to Google Scholar for the most up-to-date version

*Equal contribution †Corresponding author

Journal Articles

16. **Li, Z.***, T. Su*, B. Zhang, W. Han, S. Zhang, G. Sun, Y. Cong, X. Chen, J. Qi, Y. Wang, S. Zhao†, H. Meng†, P. Liang† and X. Gao† (2026). His-MMDM: Multi-domain and Multi-omics Translation of Histopathology Images with Diffusion Models. *Advanced Science*. 10.1002/advs.202518066

15. **Li, Z.***, B. Zhang*†, J. J. Chan*, H. Tabatabaeian, Q. Y. Tong, X. H. Chew, X. Fan, P. Driguez, C. Chan, F. Cheong, S. Wang, B. E. Siew, I. J.-W. Tan, K.-Y. Lee, B. Lieske, W.-K. Cheong, D. Kappei, K.-K. Tan, X. Gao† and Y. Tay† (2024). An isoform-resolution transcriptomic atlas of colorectal cancer from long-read single-cell sequencing. *Cell Genomics*. 10.1016/j.xgen.2024.100641.

14. **Li, Z.**, A. Napolitano, M. Fedele†, X. Gao† and F. Napolitano† (2024). AI identifies potent inducers of breast cancer stem cell differentiation based on adversarial learning from gene expression data. *Briefings in Bioinformatics*. 10.1093/bib/bbae207

13. Zhou, J.*, S. Chen*, Y. Wu*, H. Li, B. Zhang, L. Zhou, Y. Hu, Z. Xiang, **Z. Li**, N. Chen, W. Han, C. Xu, D. Wang† and X. Gao† (2024). PPML-Omics: A privacy-preserving federated machine learning method protects patients' privacy in omic data. *Science Advances*. 10.1126/sci-adv.adh8601

12. Han, W.*, N. Chen*, X. Xu, A. Sahil, J. Zhou, **Z. Li**, H. Zhong, E. Gao, R. Zhang, Y. Wang, S. Sun†, P. P.-H. Cheung† and X. Gao† (2023). Predicting the antigenic evolution of SARS-COV-2 with deep learning. *Nature Communications*. 10.1038/s41467-023-39199-6

11. Li, H.*, J. Zhou*, **Z. Li**, S. Chen, X. Liao, B. Zhang, R. Zhang, Y. Wang, S. Sun and X. Gao† (2023). A comprehensive benchmarking with practical guidelines for cellular deconvolution of spatial transcriptomics. *Nature Communications*. 10.1038/s41467-023-37168-7

10. **Li, Z.***, E. Gao*, J. Zhou, W. Han, X. Xu and X. Gao† (2023). Applications of deep learning in understanding gene regulation. *Cell Reports Methods*. 10.1016/j.crmeth.2022.100384

9. **Li, Z.***, Y. Cong*, X. Chen*, J. Qi*, J. Sun, T. Yan, H. Yang, J. Liu, E. Lu, L. Wang, J. Li, H. Hu, C. Zhang, Q. Yang, J. Yao, P. Yao, Q. Jiang, W. Liu, J. Song, L. Carin[†], Y. Chen[†], S. Zhao[†] and X. Gao[†] (2023). Vision transformer-based weakly supervised histopathological image analysis of primary brain tumors. *iScience*. 10.1016/j.isci.2022.105872

8. Xu, X., J. Zhou, C. Zhu, Q. Zhan, **Z. Li**, R. Zhang, Y. Wang, X. Liao and X. Gao[†] (2023). Optimization of binding affinities in chemical space with generative pre-trained transformer and deep reinforcement learning. *F1000Research*. 10.12688/f1000research.130936.2

7. Zhou, J.*, B. Zhang*, H. Li, L. Zhou, **Z. Li**, Y. Long, W. Han, M. Wang, H. Cui, J. Li, W. Chen[†] and X. Gao[†] (2022). Annotating TSSs in Multiple Cell Types Based on DNA Sequence and RNA-Seq Data via DeeReCT-TSS. *Genomics, Proteomics & Bioinformatics*. 10.1016/j.gpb.2022.11.010

6. **Li, Z.**, Y. Li, B. Zhang, Y. Li, Y. Long, J. Zhou, X. Zou, M. Zhang, Y. Hu[†], W. Chen[†] and X. Gao[†] (2021). DeeReCT-APA: Prediction of Alternative Polyadenylation Site Usage Through Deep Learning. *Genomics, Proteomics & Bioinformatics*. 10.1016/j.gpb.2020.05.004

5. Mottini, C.*, F. Napolitano*, **Z. Li**, X. Gao[†] and L. Cardone[†] (2021). Computer-aided drug repurposing for cancer therapy: approaches and opportunities to challenge anticancer targets. *Seminars in Cancer Biology*. 10.1016/j.semcancer.2019.09.023

4. Zhou, L., **Z. Li**, J. Zhou, H. Li, Y. Chen, Y. Huang, D. Xie, L. Zhao, M. Fan, S. Hashmi, F. Abdelkareem, R. Eiada, X. Xiao[†], L. Li[†], Z. Qiu[†] and X. Gao[†] (2020). A Rapid, Accurate and Machine-Agnostic Segmentation and Quantification Method for CT-Based COVID-19 Diagnosis. *IEEE Transactions on Medical Imaging*. 10.1109/TMI.2020.3001810

3. Wang, H.*, Y. Yang*, Y. Pan, P. Han, **Z. Li**, H. Huang[†] and S. Zhu[†] (2020). Detecting thoracic diseases via representation learning with adaptive sampling. *Neurocomputing*. 10.1016/j.neucom.2019.06.113

2. Li, Y., C. Huang, L. Ding, **Z. Li**, Y. Pan and X. Gao[†] (2019). Deep learning in bioinformatics: Introduction, application, and perspective in the big data era. *Methods*. 10.1016/j.ymeth.2019.04.008

1. Xia, Z., Y. Li, B. Zhang, **Z. Li**, Y. Hu, W. Chen and X. Gao[†] (2019). DeeReCT-PolyA: a robust and generic deep learning method for PAS identification. *Bioinformatics*. 10.1093/bioinformatics/bty991

Conference Papers

1. Han, P.*, **Z. Li***, Y. Liu, P. Zhao, J. Li, H. Wang and S. Shang (2021). Contextualized point-of-interest recommendation. *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence*. 10.24963/ijcai.2020/344

PROFESSIONAL ACTIVITIES

King Abdullah University of Science and Technology   Jan 2020 – Dec 2024
Graduate Research Assistant, Computational Bioscience Research Center (CBRC)

- Developed discriminative and generative models for histopathological image analysis

- Developed deep learning models for gene regulation with a focus on transcriptomic regulation

- Data analyses experiences with cutting-edge sequencing technologies with a focus on single-cell RNA sequencing, long-read RNA sequencing, as well as their applications in developing novel cancer therapies, *e.g.*, neoantigen-based cancer vaccines

Reviewers for journals

- *Scientific Data* (2025 - now)

- *Briefings in Bioinformatics* (2024 - now)

- *Bioinformatics* (2024 - now)

- *npj Precision Oncology* (2024 - now)

- *BMC Bioinformatics* (2023 - now)

- *BMC Genomics* (2023 - now)

- *Scientific Reports* (2023 - now)

- *IEEE Transactions on Knowledge and Data Engineering* (TKDE) (2023 - now)

Presentations & Talks

- "An isoform-resolution transcriptomic atlas of colorectal cancer from long-read single-cell sequencing", RNA 2023, Singapore. Link to poster

- "An isoform-resolution transcriptomic atlas of colorectal cancer from long-read single-cell sequencing", PacBio APAC Webinar, Aug 2023. Link to recording

HONORS AND AWARDS

- Full scholarship for MS/PhD study 2018-2024, KAUST

- Jul 2018 SUSTech Outstanding Graduates in 2018

- Oct 2016 SUSTech Scholarship, First Prize

- Nov 2014 SUSTech Scholarship for Freshman, Special Prize

PATENTS

- "Deep learning based system and method for prediction of alternative polyadenylation site" US20230073973A1

- "Rapid, accurate and machine-agnostic segmentation and quantification method and device for coronavirus CT-based diagnosis" US20230154006A1

- "Cancer vaccine for the treatment of colorectal cancer with neoantigens derived from recurrent tumor-specific isoforms" (in application)

TEACHING

- Teaching assistant for CS220 (Data Analytics) in Fall 2020.

SKILLS

Computer Skills	C/C++, Python, R, MATLAB, PyTorch, Tensorflow
Languages	Mandarin Chinese (native), English (professional proficiency)

REFERENCES

Dr. Xin Gao   xin.gao@kaust.edu.sa
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
Chair and Professor, Computer, Electrical and Mathematical Science and Engineering (CEMSE) Division
Lead, Center of Excellence (CoE) on Smart Health

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University of Sannio, Benevento, Italy
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University of Singapore, Singapore
Assistant Professor, Yong Loo Lin School of Medicine
Junior Principal Investigator, Cancer Science Institute (CSI) of Singapore