Juexiao Zhou

The Chinese University of Hong Kong, Shenzhen, China; CV version: v20260618

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Academia Experiences

The Chinese University of Hong Kong, Shenzhen — Shenzhen, China
Tenure-track Assistant Professor in Computer Science — *Aug 2025 – Present*

King Abdullah University of Science and Technology — Saudi Arabia
Student Ambassador, CEMSE — *Dec 2021 – Apr 2025*

Industry Experience

Strata Biolab Inc — United States
Co-founder & CAIO — *Apr 2026 – Present*

MOSS.ai — Saudi Arabia
Co-founder & CEO — *Sep 2024 – Dec 2025*

BeautyX.ai — Saudi Arabia
Co-founder & Chief Scientist — *Sep 2024 – Dec 2025*

DermAssure.ai — United States
Co-founder & Chief AI Scientist — *Apr 2024 – Present*

Education

King Abdullah University of Science and Technology — Saudi Arabia
Doctor of Philosophy, Ph.D. in Computer Science, Advisor: Xin Gao; ***GPA: 4.00/4.00*** — *Dec 2021 – May 2025*
Master of Science, M.S. in Computer Science, Advisor: Xin Gao; ***GPA: 3.95/4.00*** — *Aug 2020 – Dec 2021*

Southern University of Science and Technology — Shenzhen, China
Bachelor of Science, B.S. (Honored) in Bioinformatics, Advisor: Wei Chen; ***GPA: 3.92/4.00*** — *Sep 2016 – Jun 2020*

Publications

Journal (#equal contribution, *corresponding author, supervised students)

2026

1. Zhongyi Han#, Bin Wang#, Shenjing Wu#, **Juexiao Zhou#**, Gongning Luo, Benzheng Wei, Xin Gao. Adaptive feature unlearning for trustworthy medical imaging privacy. ***Medical Image Analysis.*** DOI: 10.1016/j.media.2026.104151

2. **Juexiao Zhou#**, Xiaonan He, Kai Kang, Xin Gao. Pushing the boundaries of autonomous biological discovery. ***Nature Methods.*** DOI: 10.1038/s41592-026-03018-9

2025

3. **Juexiao Zhou#**, Haoyang Li, Siyuan Chen, Zhangtianyi Chen, Zhongyi Han, Xin Gao. Large Language Models in Biomedicine and Healthcare. ***npj Artificial Intelligence.*** DOI: 10.1038/s44387-025-00047-1

4. **Juexiao Zhou#**, Jindong Jiang, Zhongyi Han, Zijian Wang, Xin Gao. Streamline Automated Biomedical Discoveries with Agentic Bioinformatics. ***Briefings in Bioinformatics.*** DOI: 10.1093/bib/bbaf505

5. Xiuying Chen, Tairan Wang, **Juexiao Zhou**, Xin Gao, Xiangliang Zhang. Evaluating and Mitigating Bias in AI-Driven Medical Text Generation. ***Nature Computational Science (IF: 12).*** DOI: 10.1038/s43588-025-00789-7.

6. Yuetan Chu, Gongning Luo, Longxi Zhou, Shaodong Cao, Guolin Ma, Xianglin Meng, Changchun Yang, Dan Mu, **Juexiao Zhou**, Dexuan Xie, Ricardo Henao, Xigang Xiao, Lianming Wu, Zhaowen Qiu, Gianluca Setti, Xin Gao. Deep learning-driven pulmonary artery and vein segmentation reveals demography-associated vasculature anatomical differences. ***Nature Communications (IF: 17).*** DOI: s41467-025-56505-6.

2024

7. Wenjia He, Xiaopeng Xu, Haoyang Li, **Juexiao Zhou**, Xin Gao. AggNet: Advancing Protein Aggregation Analysis Through Deep Learning and Protein Language Model. ***Protein Science (IF: 8.0).*** DOI: 10.1002/pro.70031.

8. Xiuying Chen, Tairan Wang, Taicheng Guo, Kehan Guo, **Juexiao Zhou**, Haoyang Li, Zirui Song, Xin Gao, Xiangliang Zhang. Unveiling the Power of Language Models in Chemical Research Question Answering. ***Communications Chemistry (IF: 5.9).*** DOI: 10.1038/s42004-024-01394-x.

9. **Juexiao Zhou**[#], Bin Zhang[#], Guowei Li, Xiuying Chen, Haoyang Li, Xiaopeng Xu, Siyuan Chen, Liwei Liu, Xin Gao*. An AI Agent for Fully Automated Multi-omic Analyses. ***Advanced Science (IF: 15.1).*** DOI: 10.1002/advs.202407094

10. **Juexiao Zhou**[#], Xiaonan He[#], Liyuan Sun[#], Jiannan Xu, Xiuying Chen, Yuetan Chu, Longxi Zhou, Xingyu Liao, Bin Zhang, Shawn Afvari, Xin Gao*. Pre-trained Multimodal Large Language Model Enhances Dermatological Diagnosis using SkinGPT-4. ***Nature Communications (IF: 17).*** DOI: 10.1038/s41467-024-50043-3.

11. Xiaopeng Xu, Chencheng Xu, Wenjia He, Lesong Wei, Haoyang Li, **Juexiao Zhou**, Ruochi Zhang, Yu Wang, Yuanpeng Xiong, Xin Gao*. HELM-GPT: de novo macrocyclic peptide design using generative pre-trained transformer. ***Bioinformatics (IF: 5.8).*** DOI: 10.1093/bioinformatics/btae364.

12. Siyuan Chen, Kaichuang Zhang, Jingdong Hu, Na Li, Ao Xu, Haoyang Li, **Juexiao Zhou**, Chao Huang, Yongguo Yu, and Xin Gao*. KaryoXpert: An Accurate Chromosome Segmentation and Classification Framework for Karyotyping Analysis without Training with Metaphase-Image Mask Annotations. ***Computers in Biology and Medicine (IF: 7.7).*** DOI: 10.1016/j.compbiomed.2024.108601.

13. **Juexiao Zhou**, Chao Huang, Xin Gao*. Patient privacy in AI-driven omics methods. ***Trends in Genetics (IF: 11.4).*** DOI: 10.1016/j.tig.2024.03.004

2023

14. **Juexiao Zhou**[#], Siyuan Chen[#], Yulian Wu[#], Haoyang Li, Bin Zhang, Longxi Zhou, Yan Hu, Zihang Xiang, Zhongxiao Li, Ningning Chen, Wenkai Han, Di Wang and Xin Gao*. PPML-Omics: A privacy-preserving federated machine learning method protects patients' privacy in omic data. ***Science Advances (IF: 15.4).*** DOI: 10.1126/sciadv.adh8601

15. **Juexiao Zhou**[#], Longxi Zhou[#], Di Wang, Xiaopeng Xu, Haoyang Li, Yuetan Chu, Wenkai Han, Xin Gao*. Personalized and privacy-preserving federated heterogeneous medical image analysis with PPPML-HMI. ***Computers in Biology and Medicine (IF: 7.7).*** DOI: 10.1016/j.compbiomed.2023.107861

16. Xingyu Liao, Wufei Zhu, **Juexiao Zhou**, Haoyang Li, Xiaopeng Xu, Bin Zhang, Xin Gao*. Repetitive DNA sequence detection and its role in the human genome. ***Communications Biology (IF: 6.548).*** DOI: 10.1038/s42003-023-05322-y.

17. **Juexiao Zhou**[#], Haoyang Li[#], Xingyu Liao, Bin Zhang, Wenjia He, Zhongxiao Li, Longxi Zhou, Xin Gao*. A unified method to revoke the private data of patients in intelligent healthcare with audit to forget. ***Nature Communications (IF: 17).*** DOI: 10.1038/s41467-023-41703-x

18. Xiaopeng Xu, **Juexiao Zhou**, Chen Zhu, Qing Zhan, Zhongxiao Li, Ruochi Zhang, Xingyu Liao, Xin Gao*. Optimization of binding affinities in chemical space with generative pre-trained transformer and deep reinforcement learning. ***F1000 Research.*** DOI: 10.12688/f1000research.130936.1

19. Wenkai Han[#], NingNing Chen[#], Xinzhou Xu, Adil Salhi, **Juexiao Zhou**, Zhongxiao Li, Huawen Zhong, Elva Gao, Ruochi Zhang, Yu Wang, Shiwei Sun, Peter Cheung, Xin Gao*. Predicting the antigenic evolution of SARS-COV-2 with deep learning. ***Nature Communications (IF: 17).*** DOI: 10.1038/s41467-023-39199-6.

20. Xiaopeng Xu, Tiantian Xu, **Juexiao Zhou**, Xingyu Liao, Ruochi Zhang, Yu Wang, Lu Zhang, Xin Gao*. AB-Gen: Antibody Library Design with Generative Pre-trained Transformer and Deep Reinforcement Learning. ***Genomics, Proteomics & Bioinformatics (IF: 10.1).*** DOI: 10.1016/j.gpb.2023.03.004.

21. Haoyang Li#, **Juexiao Zhou#**, Zhongxiao Li, Siyuan Chen, Xingyu Liao, Bin Zhang, Ruochi Zhang, Yu Wang, Shiwei Sun, Xin Gao*. A comprehensive benchmarking with practical guidelines for cellular deconvolution of spatial transcriptomic. ***Nature Communications (IF: 17).*** DOI: 10.1038/s41467-023-37168-7

22. Yongkang Long#, Bin Zhang#, Shuye Tian, Jiajia Chan, **Juexiao Zhou**, Zhongxiao Li, Yisheng Li, Zheng An, Xingyu Liao, Yu Wang, Shiwei Sun, Ying Xu, Yvonne Tay, Wei Chen*, Xin Gao*. Accurate transcriptome-wide identification and quantification of alternative polyadenylation from RNA-seq data with APAIQ. ***Genome Research (IF: 9.438).*** DOI: 10.1101/gr.277177.122.

23. Zhongxiao Li#, Elva Gao#, **Juexiao Zhou**, Wenkai Han, Xiaopeng Xu, and Xin Gao*. Applications of Deep Learning in Understanding Gene Regulation. ***Cell Reports Methods.*** DOI: 10.1016/j.crmeth.2022.100384

2022

24. **Juexiao Zhou#**, Bin Zhang#, Haoyang Li, Longxi Zhou, Zhongxiao Li, Yongkang Long, Wenkai Han, Mengran Wang, Huanhuan Cui, Wei Chen, Xin Gao*. Annotating TSSs in Multiple Cell Types Based on DNA Sequences and RNA-seq Data via DeeReCT-TSS. ***Genomics, Proteomics & Bioinformatics (IF: 10.1).*** DOI: 10.1016/j.gpb.2022.11.010

25. Haoyang Li, Hanmin Li, **Juexiao Zhou** and Xin Gao*. SD2: Spatially resolved transcriptomics deconvolution through integration of spatial and dropout information. ***Bioinformatics (IF: 6.931).*** DOI: 10.1093/bioinformatics/btac605

26. Longxi Zhou#, Xianglin Meng#, Yuxin Huang#, Kai Kang#, **Juexiao Zhou**, Yuetan Chu, Haoyang Li, Dexuan Xie, Jiannan Zhang, Weizhen Yang, Na Bai, Yi Zhao, Mingyan Zhao, Guohua Wang, Lawrence Carin, Xigang Xiao, Kaijiang Yu, Zhaowen Qiu, Xin Gao*. An Interpretable Deep Learning Workflow for Discovering Sub-Visual Abnormalities in CT Scans of COVID-19 Inpatients and Survivors. ***Nature machine intelligence (IF: 25.9).*** DOI: 10.1038/s42256-022-00483-7

2021

27. Haoyang Li, **Juexiao Zhou**, Yi Zhou, Jieyu Chen, Feng Gao, Ying Xu, Xin Gao*. An interpretable computer-aided diagnosis method for periodontitis from panoramic radiographs. ***Frontiers in Physiology, section Computational Physiology and Medicine (IF: 4.755).*** DOI: 10.3389/fphys.2021.655556.

2020

28. Zhongxiao Li, Yisheng Li, Bin Zhang, Yu Li, Yongkang Long, **Juexiao Zhou**, Xudong Zou, Min Zhang, Yuhui Hu, Wei Chen, Xin Gao*. DeeReCT-APA: Prediction of Alternative Polyadenylation Site Usage through Deep Learning. ***Genomics Proteomics and Bioinformatics (IF: 10.1).*** DOI: 10.1016/j.gpb.2020.05.004.

29. Liongxi Zhou, Zhongxiao Li, **Juexiao Zhou**, Haoyang Li, Yupeng Chen, Yuxin Huang, Dexuan Xie, Lintao Zhao, Ming Fan, Shahrukh Hashmi, Faisal AbdelKareem, Riham Eiada, Xigang Xiao, Lihua Li, Zhaowen Qiu, and Xin Gao*. A Rapid, Accurate and Machine-agnostic Segmentation and Quantification Method for CT-based COVID-19 Diagnosis. ***IEEE Transactions on Medical Imaging (IF: 11.037).*** DOI: 10.1109/TMI.2020.3001810.

30. Haoyang Li, **Juexiao Zhou**, Huiyan Sun, Zhaowen Qiu, Xin Gao* and Ying Xu*. CaMeRe: A novel tool for inference of cancer metabolic reprogramming. ***Front. Oncol. (IF: 6.244).*** DOI: 10.3389/fonc.2020.00207.

GBD

31. Yisheng Li#, Bernhard Schaefke#, Xudong Zou, Min Zhang, Florian Heyd, Wei Sun, Bin Zhang, Guipeng Li, Weizheng Liang, Yuhao He, **Juexiao Zhou**, Yunfei Li, Liang Fang, Yuhui Hu*. Pan-tissue analysis of allelic alternative polyadenylation suggests widespread functional regulation. ***Molecular Systems Biology (IF: 12.744).*** DOI: 10.15252/msb.20199367.

32. GBD 2023 Causes of Death Collaborators* (Authors listed alphabetically). Global burden of 292 causes of death in 204 countries and territories and 660 subnational locations, 1990–2023: a systematic analysis for the Global Burden of Disease Study 2023. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(25)01917-8.

33. GBD 2023 Disease and Injury and Risk Factor Collaborators* (Authors listed alphabetically). Burden of 375 diseases and injuries, risk-attributable burden of 88 risk factors, and healthy life expectancy in 204 countries and territories, including 660 subnational locations, 1990–2023: a systematic analysis for the Global Burden of Disease Study 2023. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(25)01637-X.

34. GBD 2023 Demographics Collaborators* (Authors listed alphabetically). Global age-sex-specific all-cause mortality and life expectancy estimates for 204 countries and territories and 660 subnational locations, 1950–2023: a demographic analysis for the Global Burden of Disease Study 2023. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(25)01330-3.

35. GBD 2023 Cancer Collaborators* (Authors listed alphabetically). The global, regional, and national burden of cancer, 1990–2023, with forecasts to 2050: a systematic analysis for the Global Burden of Disease Study 2023. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(25)01635-6.

36. GBD 2021 Upper Respiratory Infections Otitis Media Collaborators* (Authors listed alphabetically). Global, regional, and national burden of upper respiratory infections and otitis media, 1990–2021: a systematic analysis from the Global Burden of Disease Study 2021. ***The Lancet Infectious Diseases (IF=36.4).*** DOI: 10.1016/S1473-3099(24)00430-4 .

37. GBD 2021 Forecasting Collaborators* (Authors listed alphabetically). Burden of disease scenarios for 204 countries and territories, 2022–2050: a forecasting analysis for the Global Burden of Disease Study 2021. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(24)00685-8.

38. GBD 2021 Risk Factors Collaborators* (Authors listed alphabetically). Global burden and strength of evidence for 88 risk factors in 204 countries and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(24)00933-4.

39. GBD 2021 Diseases and Injuries Collaborators* (Authors listed alphabetically). Global incidence, prevalence, years lived with disability (YLDs), disability-adjusted life-years (DALYs), and healthy life expectancy (HALE) for 371 diseases and injuries in 204 countries and territories and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(24)00757-8.

40. GBD 2021 Causes of Death Collaborators* (Authors listed alphabetically). Global burden of 288 causes of death and life expectancy decomposition in 204 countries and territories and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(24)00367-2.

41. GBD 2021 Fertility and Forecasting Collaborators* (Authors listed alphabetically). Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: a comprehensive demographic analysis for the Global Burden of Disease Study 2021. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(24)00550-6.

42. GBD 2021 Demographics Collaborators* (Authors listed alphabetically). Global age-sex-specific mortality, life expectancy, and population estimates in 204 countries and territories and 811 subnational locations, 1950–2021, and the impact of the COVID-19 pandemic: a comprehensive demographic analysis for the Global Burden of Disease Study 2021. ***The Lancet (IF=168.9).*** DOI: 10.1016/S0140-6736(24)00476-8.

Conference (#equal contribution, *corresponding author)

2020

43. Haoyang Li, **Juexiao Zhou**, Yi Zhou, Jieyu Chen, Feng Gao, Ying Xu, Xin Gao*. Automatic and interpretable model for periodontitis diagnosis in panoramic radiographs. ***Medical Image Computing and Computer Assisted Interventions 2020.*** DOI: 10.1007/978-3-030-59713-9_44.

Posters & Technical Reports (#equal contribution, *corresponding author)

44. **Juexiao Zhou**, Xin Gao*. Privacy in Bioinformatics and Intelligent Healthcare. Poster. ***Smart-Health Student Research Symposium***, KAUST, Saudi Arabia, November 10, 2022.

45. Haoyang Li, **Juexiao Zhou**, Xin Gao*. Deetal-Perio: DEEp denTAL Advisor for Periodontitis Diagnosis based on Two-step Segmentation of Teeth and Gingiva with Lower-dimensional Features. Poster. ***DigitalHealth***, KAUST, 2020.

46. Haoyang Li, **Juexiao Zhou**, Huiyan Sun, Zhaowen Qiu, Xin Gao* and Ying Xu*. CaMeRe: A novel tool for inference of cancer metabolic reprogramming. Poster. ***Advance In Artificial Intelligence***, KAUST, 2019.

47. Yongkang Long, **Juexiao Zhou**, Zhongxiao Li, Wei Chen, Xin Gao*. DeeRect-PAS—A Deep-Learning based method for Transcriptome-wide PAS Identification. Poster. ***Advance In Artificial Intelligence***, KAUST, 2019.

48. Min Zhang, Yisheng Li, **Juexiao Zhou**, Yuhao He, Guipeng Li, Liang Fang, Wei Chen*. Systematical discovery of cis-elements regulating alternative polyadenylation in mammalian cells. Poster. ***RNA Biology***, CSH Asia, 2019.

49. Min Zhang, Yisheng Li, **Juexiao Zhou**, Yuhao He, Guipeng Li, Liang Fang, Wei Chen*. Systematical discovery of cis-elements regulating alternative polyadenylation in mammalian cells. Poster. ***Regulatory RNAs, Cell Symposia***, Berlin, Germany, May 12-14, 2019.

Pre-Prints (#equal contribution, *corresponding author, supervised students)

50. Xinyuan Zhang, Zijian Wang, Chang Dao, **Juexiao Zhou***. Honesty-Aware Multi-Agent Framework for High-Fidelity Synthetic Data Generation in Digital Psychiatric Intake Doctor-Patient Interactions. under review.

51. **Juexiao Zhou**, Xiaonan He, Kai Kang, Xin Gao. Pushing the boundaries of autonomous biological discovery. under review.

52. Jiahe Qian, Yuhao Shen, Zhangtianyi Chen, **Juexiao Zhou***, Peisong Wang. CoTBox-TTT: Grounding Medical VQA with Visual Chain-of-Thought Boxes During Test-time Training. under review.

53. Yuhao Shen, Jiahe Qian, Zhangtianyi Chen, Yuanhao He, **Juexiao Zhou***. SkinGPT-R1: Adapter-Only Dual Distillation for Efficient Dermatology Reasoning. under review.

54. Yuhao Shen, Liyuan Sun, Yan Xu, Wenbin Liu, Shuping Zhang, Shawn Afvari, Zhongyi Han, Jiaoyan Song, Yongzhi Ji, Tao Lu, Xiaonan He, Xin Gao, **Juexiao Zhou***. SkinCaRe: A Multimodal Dermatology Dataset Annotated with Medical Caption and Chain-of-Thought Reasoning. under review.

55. Florensia Widjaja, Zhangtianyi Chen, **Juexiao Zhou***. BioinfoMCP: A Unified Platform Enabling MCP Interfaces in Agentic Bioinformatics. under review.

56. Yuhao Shen, Jiahe Qian, Shupingzhang, Zhangtianyi Chen, Tao Lu, **Juexiao Zhou***. Towards Trustworthy Dermatology MLLMs: A Benchmark and Multimodal Evaluator for Diagnostic Narratives. under review.

57. Jiahe Qian, Xiaotong Luo, **Juexiao Zhou***. MoE Meets Reparameterization: Reparameterizable Mixture-of-Experts Model Enhances Dermatology Diagnosis via Dense-to-Experts Distillation. under review.

58. **Juexiao Zhou**, Zhongyi Han, Mankun Xin, Xingwei He, Guotao Wang, Jiaoyan Song, Gongning Luo, Wenjia He, Xintong Li, Yuetan Chu, Juanwen Chen, Bo Wang, Xia Wu, Wenwen Duan, Zhixia Guo, Liyan Bai, Yilin Pan, Xuefei Bi, Lu Liu, Long Feng, Xiaonan He, Xin Gao. Facial Foundational Model Advances Early Warning of Coronary Artery Disease from Live Videos with DigitalShadow. under review.

59. Longxi Zhou, Yuetan Chu, Xianglin Meng, Gongning Luo, **Juexiao Zhou**, Kai Kang, Yang Gao, Xue Du, Anthony Capone, Dan Mu, Gang Yang, Manxi Xu, Shilong Sun, Hongwei Yu, Tong Zhang, Dexuan Xie, Mingsheng Lei, Guoxu Zhang, Shibo Wu, Lei Xu, Xin Guo, Jinyu Meng, Yuan Cheng, Ricardo Henao, Lawrence Carin, Yuan Qi, Gianluca Setti, Guo-Lin Ma, Zhaowen Qiu, Xin Gao. Beyond Perceptual Limit: Verifiable AI for Pulmonary Embolism Detection on Non-contrast CT. under review.

60. Mitigating Bias Catastrophic Inheritance in Medical Large Vision-Language Models with Logit Fairness Adjustment. under review.

61. **Juexiao Zhou**, Jindong Jiang, Zhongyi Han, Xin Gao. Agentic Bioinformatics. under review.

62. Zhongyi Han, Bin Wang, Shenjing Wu, **Juexiao Zhou**, Wenhao Wang, Gongning Luo, Benzheng Wei, Xin Gao. Adaptive Feature Unlearning for Trustworthy Healthcare Data Privacy. under review.

63. **Juexiao Zhou**, Haoyang Li, Siyuan Chen, Zhongyi Han, Xin Gao. Large Language Models in Biomedicine and Healthcare. under review.

64. **Juexiao Zhou**[#], Liyuan Sun[#], Yan Xu[#], Wenbin Liu[#], Shawn Afvari[#], Zhongyi Han, Jiaoyan Song, Yongzhi Ji, Xiaonan He, Xin Gao*. SkinCAP: A Multi-modal Dermatology Dataset Annotated with Rich Medical Captions. under review.

65. Xuan Zhou[#], Baolei Yuan[#], Yeteng Tian, **Juexiao Zhou**, Mengge Wang, Ismail shakir, Yingzi Zhang, Chongwei Bi, Bayan Mohammed Aljamal, Mais Omar Hashem, Omar Imad Abuyousef, Firdous Mohammed Abdulwahab, Afshan Ali, Sarah Dunn, James Moresco, John Robert Yates III, Francesco Frassoni, Xin Gao, Fowzan Alkuraya, Juan Carlo Izpisua Belmonte, Mo Li*. Wiskott-Aldrich Syndrome Protein Regulates Nucleolar Organization and Function in Innate Immune Response. under review.

66. Xingyu Liao[#], **Juexiao Zhou**[#], Bin Zhang[#], Xingyi Li, Xiaopeng Xu, Haoyang Li, Xin Gao*. Deep Learning Enhanced Tandem Repeat Variation Identification via Multi-Modal Conversion of Nanopore Reads Alignment. under review.

67. **Juexiao Zhou**[#], Xiuying Chen[#], Xin Gao*. Path to Medical AGI: Unify Domain-specific Medical LLMs with the Lowest Cost. under review.

68. Yuetan Chu[#], Longxi Zhou[#], **Juexiao Zhou**, Yuxin Huang, Tianyi Xing, Dexuan Xie, Xigang Xiao, Zhaowen Qiu, Xin Gao*. An end-to-end workflow for robust pulmonary artery-vein segmentation on thick-slice chest CT. under review.

69. Longxi Zhou, Yitong Ding, Jiayang Guo, Ming Fan, **Juexiao Zhou**, Haoyang Li, Yujiao Li, Yuxin Huang, Yi Zhao, Yuetan Chu, Kun Wang, Qiming Fang, Xin Gao, Hongxia Zhang, Lihua Li. Heart Region Anchoring: a Model-Agnostic Workflow to Improve Segmentation Robustness for Breast Cancer in DCE-MRI. under review.

Patents and Patent Applications

70. **Juexiao Zhou**, Xin Gao. Automated Bioinformatics Analysis via AutoBA. KAUST reference: 2024-010.

71. **Juexiao Zhou**, Xin Gao. Personalized and privacy-preserving federated heterogeneous medical image analysis with PPPML-HMI. KAUST reference: 2023-012.

72. Xingyu Liao, **Juexiao Zhou**, Xin Gao. A high-precision identification method of tandem repeat expansion based on refined alignment and deep learning. KAUST reference: 2023-054.

73. **Juexiao Zhou**, Xin Gao. Audit to forget: a unified suite to revoke patients' private data in intelligent healthcare. KAUST reference: 2023-056.

74. **Juexiao Zhou**, Xin Gao. A camera-based privacy-preserving early warning system for critical diseases. KAUST reference: 2023-074.

Teaching Experience

CSC3100 Data Structures CUHK-Shenzhen, China
Instructor *Fall 2025, Summer 2026*

DDA3020 Machine Learning CUHK-Shenzhen, China
Instructor *Fall 2025*

CS220, Data Analytics - AI Camp for Ministry of Interior, Saudi Arabia KAUST
Teaching Assistant *Fall 2024/2025*

- Cooperated with Prof. Xin Gao

CS220, Data Analytics, Saudi Arabia KAUST
Teaching Assistant *Fall 2024/2025*

- Cooperated with Prof. Xin Gao

CS220, Data Analytics - AI Camp for Ministry of Interior, Saudi Arabia KAUST
Senior Teaching Assistant *Fall 2023/2024*

- Cooperated with Prof. Xin Gao

CS220, Data Analytics KAUST
Teaching Assistant *Fall 2022/2023*

- Cooperated with Prof. Xin Gao

BioE 201/230 Foundations of Bioengineering Building 9 Room 4225, KAUST
Guest Lecturer *Fall 2022/2023*

- Cooperated with Prof. Xin Gao
- Lab 1. Genome data analysis, 2022.08.30, Content: Python basics, D/RNA sequence analysis, Biopython, BLAST, Reference genome
- Lab 2. Protein sequence analysis, 2022.09.06, Content: Protein sequence analysis, MSA, PDB, PyMOL, Secondary structure prediction
- Lab 3. Protein structure and function, 2022.09.13, Content: Ab initio with PyRosetta, AlphaFold2, NucleicNet, Docking with Smina, Pfam annotation with deep learning

CS398 Graduate Seminar KAUST
Teaching Assistant *Spring 2022*

- Cooperated with Prof. Dominik Michels

Honors & Awards

The Chinese University of Hong Kong, Shenzhen 2025-Present
Tenure-track Assistant Professor *School of Data Science*

- Innovation awards for Outstanding Scientific Research Achievements, The 27th China Hi-tech fair (two awards), 2025
- The first batch of Members of ISCB-China Council, 2025

King Abdullah University of Science and Technology, KAUST 2021-2025
PhD, Computer Science

- CEMSE Dean's List Award, 2025
- CEMSE Dean's List Award, 2024
- CEMSE Dean's List Award, 2023
- KAUST AII's NeurIPS travel grant, 2022
- CEMSE Dean's List Award, 2022
- Excellent Research Award, CEMSE, 2021

King Abdullah University of Science and Technology, KAUST 2020-2021
Master of Science, Computer Science

- Student ambassador, CEMSE, 2021
- Yearly best student award, CEMSE, 2021
- Full scholarship for MS/PhD study, 2020

Southern University of Science and Technology, SUSTech 2016-2020

Bachelor of Science, Bioinformatics

- Outstanding graduate of SUSTech, 2020.
- Cum Laude Graduate of the Department of Biology (Top 1/10), 2020.
- The Guinness world record for "the most vows received by a single civilized act activity", 2019
- Candidate for 2019 National Scholarship, 2019
- Summer social practice excellent experience Award, 2018
- Excellent Student, The First Prize Scholarship, 2018
- Outstanding volunteer for the 12th CBIS Biennial Meeting, Shenzhen, China, 2018
- Candidate for 2018 National Scholarship, 2018
- Outstanding Volunteer of the 3rd Shenzhen International Life Science & Health Industry Summit (2016) Excellent Student, The First Prize Scholarship, 2017
- Dean scholarship, The First Prize Scholarship, 2017
- Excellent Student Cadre, 2017
- Outstanding Volunteer of 2017 Shenzhen International Precision Medicine Summit, 2017
- Alma mater practice excellent team, 2017
- National Literary Creation Award, 2016
- Excellent Student, The Second Prize Scholarship, 2016

Memberships

- Chinese Association for Artificial Intelligence (CAAI) Member, 2018-Present
- The international Asia-Pacific Bioinformatics Network (APBioNET) Member, 2022-Present
- Global Burden of Disease (GBD) Collaborator Network Member, 2023-Present
- Corresponding Member of the Bioinformatics Technical Committee, CCF, 2025-Present
- Member of ISCB-China Council, 2025-Present
- Member of the Oncology Imaging and Big Data Branch, Guangdong Medical Association, 2025-Present

Press Coverage

SkinGPT-4 was covered by:

- How a Saudi university is using AI to transform the diagnosis and treatment of skin diseases, **Arab News**
- How Saudi Arabia's SkinGPT-4 is Revolutionizing Skin Care?, **ChicHue**

PPML-Omics protects patients' privacy in omic data was covered by:

- Algorithm Proposed to Protect Patient Privacy, **Inside Precision Medicine**
- An integrated shuffler optimizes the privacy of personal genomic data used for machine learning, **Today Headline**
- An integrated shuffler optimizes the privacy of personal genomic data used for machine learning, **Tech Xplore**
- Shuffling the deck for privacy, **ScienMag**
- Shuffling the deck for privacy, **Bioengineer.org**
- Shuffling the deck for privacy, **Newswise**
- Shuffling the deck for privacy, **EurekAlert**

- Novel Privacy-Preserving Machine-Learning Method Developed for Genomics Data, **Biocompare**
- Revolutionizing Healthcare: Secure Multi-Party Computation and Privacy-Preserving Machine Learning, **BNN Breaking**
- An integrated shuffler optimizes the privacy of personal genomic data used for machine learning, **Microsoft Start**

Audit to forget was covered by:

- Un logiciel pour garantir le droit à l'oubli des patients dans l'IA en milieu de santé, **Enerzine**
- Safeguarding the right to be forgotten, **KAUST Discovery**

Invited Talks

- [2025/11/28] Towards Trustworthy, Explainable and Ethical Intelligent Healthcare. *Oral.* Intelligence Empower Digital Future, 2025 Smart Healthcare and Digital Health Innovation Development Conference, Shenzhen, China.
- [2025/08/10] Towards Healthcare Ethical AI. *Oral.* 10th China Computer Federation Bioinformatics Conference, Haikou, Hainan, China.
- [2025/07/14] Towards Healthcare Ethical AI. *Oral.* Innovative Practice of New Medicine: Artificial Intelligence Empowering Scientific Research, Shantou University Medical College, China.
- [2025/06/06] Towards Healthcare Ethical AI. *Oral.* BAAI Conference, 2025, Beijing, China.
- [2025/05/15] Pre-trained Multimodal Large Language Model Enhances Dermatological Diagnosis using SkinGPT-4. *Poster.* Inaugural KCSH Conference: Shaping the Future of Smart Health, Jeddah, Saudi Arabia.
- [2025/02/24] Private Artificial Intelligence (PAI) for Healthcare. *Oral.* Shanghai Innovation Institute, China.
- [2024/11/27] Pre-trained Multimodal Large Language Model Enhances Dermatological Diagnosis using SkinGPT-4. *Poster.* 1st International Health Conference on Quality and Organization Excellence, Jeddah, Saudi Arabia.
- [2024/10/22] Pre-trained Multimodal Large Language Model Enhances Dermatological Diagnosis using SkinGPT-4. *Poster.* Health Innovation Week, 2024 Global Health Exhibition, Riyadh, Saudi Arabia.
- [2024/08/15] AI for Healthcare: Pre-trained Multimodal Large Language Model Enhances Dermatological Diagnosis using SkinGPT-4. *Oral.* Intelligent Computing Enabled Medicine, Shantou University Medical School, China.
- [2023/11/22] Introduction to ChatGPT and Application of GPT in Healthcare. *Oral.* Saudi Olympiad Elite Camp, King Abdullah University of Science and Technology, Saudi Arabia.
- [2023/09/20] A Unified Method to Revoke the Private Data of Patients in Intelligent Healthcare with Audit to Forget. *Oral.* CBRC Seminar, King Abdullah University of Science and Technology, Saudi Arabia.
- [2023/06/12] SkinGPT-4: An Interactive Dermatology Diagnostic System with Visual Large Language Model. *Oral.* Unlocking the Power of 'ChatGPT', King Abdullah University of Science and Technology, Saudi Arabia.
- [2023/03/02] Audit to Forget: A Unified Method to Revoke Patients' Private Data in Intelligent Healthcare. *Poster.* CBRC session, KAUST Research Open Week, Saudi Arabia.
- [2023/02/02] Audit to Forget: A Unified Method to Revoke Patients' Private Data in Intelligent Healthcare. *Oral & Poster.* Spotlight, Rising Stars in AI Symposium 2023 at KAUST, Saudi Arabia.
- [2022/11/10] Privacy in Bioinformatics and Intelligent Healthcare. *Poster.* Smart-Health Student Research Symposium, KAUST, Saudi Arabia.
- [2022/03/29] PPML-Omics: a Privacy-Preserving federated Machine Learning system protects patients' privacy from omic data. *Oral.* CBRC Dual Seminar, King Abdullah University of Science and Technology, Saudi Arabia.
- [2022/03/09] PPML-Omics: a Privacy-Preserving federated Machine Learning system protects patients' privacy from omic data. *Oral.* BDAI, Beijing, China.

Academic Services

Reviewer

(Journal/Conference Name, number of reviews)

- AI4D3 @ NeurIPS 2023, #1
- BMC Artificial Intelligence, #1
- BMC Bioinformatics, #2
- BMC Medical Informatics and Decision Making, #1
- Computers in Biology and Medicine, #21
- Computational Biology and Chemistry, #3
- Computerized Medical Imaging and Graphics, #2
- Computational and Structural Biotechnology Journal, #1
- Genome Biology, #1
- Genome Research, #2
- Heliyon, #1
- IJCAI-ECAI 2022, #1
- ICONIP2020, #1
- ICMLA2021, #1
- International Journal of Intelligent Systems, #1
- IEEE Transactions on Knowledge and Data Engineering, #1
- International Journal of Machine Learning and Cybernetics, #1
- Journal of Bioinformatics and Computational Biology, #1
- Knowledge and Information Systems, #1
- Medical Image Analysis, #2
- MICCAI2020, #1
- MICCAI2024, #5
- Multimedia Systems, #1
- Nature, #1
- Nature Methods, #3
- Nature Communications, #4
- npj Precision Oncology, #1
- npj Digital Medicine, #2
- npj Artificial Intelligence, #2
- Quantitative Biology, #2
- SIGKDD2022, #2
- Scientific Reports, #4
- TMLR, #1

Editor

- Editorial Board Member of npj Artificial Intelligence, 2025-Present
- Editorial Board Member of BMC Bioinformatics, 2024-Present
- Biomedical Informatics, Special issue: spatial transcriptomics, Guest Editor, 2024-Present
- PC member of ISMB 2026
- PC member of BIBM 2026

Conference Administrator

- IS-HIS 2025 Symposium, ICCNS2025, Varna, Bulgaria, Co-Chair
- The 21st International Conference on Bioinformatics (InCoB2022), Administrator