

Kevin W. Jin

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EDUCATION

Yale University <i>Ph.D. Computational Biology and Biomedical Informatics</i>	New Haven, CT 2023 –
Johns Hopkins University <i>B.S. Molecular and Cellular Biology</i>	Baltimore, MD 2016 – 2020

AWARDS AND HONORS

Dean's Excellence Award <i>UTHealth McWilliams School of Biomedical Informatics</i>	2023
Biomedical Data Science Award <i>Dartmouth College</i>	2023
Rensselaer Medal <i>Rensselaer Polytechnic Institute</i>	2016

PEER-REVIEWED PUBLICATIONS

- [1] Ruichen Rong, Kristin Denton, **Kevin W. Jin**, Peiran Quan, Zhuoyu Wen, Julia Kozlitina, Stephen Lyon, Aileen Wang, Carol A. Wise, Bruce Beutler, Donghan M. Yang, Qiwei Li, Jonathan J. Rios, and Guanghua Xiao. "Deep Learning-Based Automated Measurement of Murine Bone Length in Radiographs". In: *Bioengineering* (2024). DOI: 10.3390/bioengineering11070670.
- [2] **Kevin W. Jin**, Qiwei Li, Yang Xie, and Guanghua Xiao. "Artificial intelligence in mental healthcare: an overview and future perspectives". In: *The British Journal of Radiology* (2023). DOI: 10.1259/bjr.20230213.
- [3] Ruichen Rong, Hudanyun Sheng, **Kevin W. Jin**, Fangjiang Wu, Danni Luo, Zhuoyu Wen, Chen Tang, Donghan M. Yang, Liwei Jia, Mohamed Amgad, Lee A.D. Cooper, Yang Xie, Xiaowei Zhan, Shidan Wang, and Guanghua Xiao. "A Deep Learning Approach for Histology-Based Nuclei Segmentation and Tumor Microenvironment Characterization". In: *Modern Pathology* (2023). DOI: 10.1016/j.modpat.2023.100196.
- [4] Zhuoyu Wen, Yu-Hsuan Lin, Shidan Wang, Naoto Fujiwara, Ruichen Rong, **Kevin W. Jin**, Donghan M. Yang, Bo Yao, Shengjie Yang, Tao Wang, Yang Xie, Yujin Hoshida, Hao Zhu, and Guanghua Xiao. "Deep-Learning-Based Hepatic Ploidy Quantification Using H&E Histopathology Images". In: *Genes* 14.4 (2023). DOI: 10.3390/genes14040921.
- [5] Jie Yang, Xi Jiang, **Kevin W. Jin**, Sunyoung Shin, and Qiwei Li. "Bayesian hidden mark interaction model for detecting spatially variable genes in imaging-based spatially resolved transcriptomics data". In: *Frontiers in Genetics* (2023). DOI: 10.3389/fgene.2024.1356709.
- [6] Xinyi Zhang, Frederico O. Gleber-Netto, Shidan Wang, Roberta Rayra Martins-Chaves, Richardo Santiago Gomez, Nadarajah Vigneswaran, Arunangshu Sarkar, William N. William Jr., Vassiliki Papadimitrakopoulou, Scott M. Lippman, Michelle Williams, Diana Bell, John V. Heymach, Ann M. Gillenwater, Jeffrey N. Myers, Renata Ferrarotto, **Kevin W. Jin**, Curtis R. Pickering, and Guanghua Xiao. "A Deep Learning Onion Peeling Approach to Measure Oral Epithelium Layer Number". In: *Cancers* (2023). DOI: 10.3390/cancers15153891.
- [7] Qinbo Zhou, Donghan M. Yang, Lauren Furman, Xian Cheng, Danni Luo, Yueqi Li, **Kevin W. Jin**, Lin Xu, Bo Yao, Patrick Leavey, Tammy Lo, David S. Shulman, Don Barkauskas, Katherine Janeway, Chand Khanna, Richard Gorlick, Guanghua Xiao, Stephen X. Skapek, Laura J. Klesse, Brian Crompton, and Yang Xie. "Osteosarcoma Explorer: A Data Commons with Clinical, Genomic, Protein and Tissue Imaging Data for Osteosarcoma Research". In: *JCO Clinical Cancer Informatics* (2023). DOI: 10.1200/CCI.23.00104.

PREPRINTS

- [1] Xi Jiang, Danni Luo, Esteban Fernández, Jie Yang, Huimin Li, **Kevin W. Jin**, Yuanchun Zhan, Bo Yao, Suhana Bedi, Guanghua Xiao, Xiaowei Zhan, Qiwei Li, and Yang Xie. "Spatial Transcriptomics Arena (STAR): an Integrated Platform for Spatial Transcriptomics Methodology Research". In: *bioRxiv* (2023). DOI: 10.1101/2023.03.10.532127.

TALKS AND PRESENTATIONS

- [1] “Evaluating large language models for complex diagnostic reasoning in clinical psychiatry”. Poster presented at the Computational Psychiatry conference at the University of Minnesota in Minneapolis, MN. July 2024. URL: <https://tinyurl.com/cpc2024-jin-poster>.
- [2] “Modeling psychiatric phenotypes from wearable accelerometer data derived from the UK BioBank”. Talk delivered at the Yale University Bridging GAPS Diversity in STEM Symposium in New Haven, CT. Apr. 2024. URL: <https://tinyurl.com/bridging-gaps-2024>.
- [3] “Bayesian Clustering of n-gons via a Double Dirichlet Mixture Model”. Talk delivered at the Texas-Oklahoma Regional Undergraduate Symposium in Dallas, TX. Feb. 2023. URL: <https://tinyurl.com/bacon-2023-jin>.
- [4] “Adventures in Cluster Analysis: Approaching Shape Clustering”. Talk delivered at The University of Texas at Dallas Joint Bioinformatics Seminar in Richardson, TX. Oct. 2022. URL: <https://tinyurl.com/shape-clustering-2023>.
- [5] “Generating Microfluidic Gradients for the Study of an Olfactory Receptor involved in Prostate Cancer Metastasis”. Talk delivered at the Johns Hopkins Undergraduate Research Symposium in Baltimore, MD. Oct. 2019. URL: <https://tinyurl.com/urs-2019>.
- [6] “Could olfactory receptors modulate prostate cancer metastasis?” Poster presented at Johns Hopkins Day of Undergraduate Research in Engineering, the Arts & Humanities, Medicine and the Sciences in Baltimore, MD. Apr. 2018. URL: <https://tinyurl.com/dreams-2018>.

RESEARCH EXPERIENCE

Graduate Research Assistant

2023 –

Advisor: Hua Xu | Yale School of Medicine

New Haven, CT

- Evaluate state-of-the-art large language models on psychiatric diagnosis and fine-tune a large language model for psychiatry question-answering.
- Identify linguistic markers of psychiatric conditions (e.g. ADHD, bipolar disorder, depression, psychedelic study subjects) from patient narratives and social media.
- Predict mental health phenotypes (e.g. binge eating disorder) from wearable biosensor data.
- Build a foundation model for neuroscience for the Wu Tsai Institute Grand Challenge.

Research Intern

2022 – 2023

Advisor: Guanghua Xiao | The University of Texas Southwestern Medical Center

Dallas, TX

- Designed an NLP pipeline to analyze electronic health records and predict disease severity among patients with cutaneous lupus erythematosus.

Research Assistant

2022 – 2023

Advisor: Qiwei Li | The University of Texas at Dallas

Richardson, TX

- Developed BACON, an R package for a Bayesian shape clustering algorithm, in collaboration with others.

Undergraduate Research Assistant

2019 – 2020

Advisor: Soojung Claire Hur | Johns Hopkins University

Baltimore, MD

- Optimized a microfluidic odorant gradient generator for single-cell analysis of prostate cancer cell migration.
- Helped write a MATLAB video analysis script determining fluid flow direction in the gradient generator.
- Fabricated liposomes to assist the development of human-derived exosomes as therapeutic vehicles.

Summer Research Intern

2018

Advisor: Debabrata Saha | The University of Texas Southwestern Medical Center

Dallas, TX

- Assessed the radiosensitization efficacy of four DNA-dependent protein kinase inhibitors in hypoxic cancer cells.

Undergraduate Research Assistant

2018 – 2019

Advisor: Steven S. An | Johns Hopkins Bloomberg School of Public Health

Baltimore, MD

- Found an inverse relationship between olfactory receptor expression and prostate cancer metastatic potential.
- Analyzed changes in prostate cancer cell stiffness upon odorant exposure using optical magnetic twisting cytometry.

TEACHING EXPERIENCE

Undergraduate Learning Assistant

2019 – 2020

Johns Hopkins University

Baltimore, MD

- General Physics for Physical Science Majors (Active Learning) I-II: Guided students during in-class problem-solving.

Student Mentor

2018 – 2020

Johns Hopkins University

Baltimore, MD

- General Biology I-II: Authored problem sets and study guides that were incorporated into course material, held office hours, and graded exams.

SKILLS AND ABILITIES

Programming: Python, R, SQL, JavaScript, HTML, CSS

Software: Git, high-performance computing, L^AT_EX

Languages: English (native), Mandarin Chinese (fluent), Japanese (intermediate)

PROFESSIONAL ACTIVITIES

Conference Reviewer: NLP and LLM Applications @ COLING 2025

Conference Organizer: Visual Analytics in Healthcare Workshop @ AMIA 2024

Memberships: Sigma Xi, American Medical Informatics Association, American Statistical Association