Kevin W. Jin

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Education

Yale University — New Haven, CT
Ph.D. Computational Biology and Bioinformatics — *Aug. 2023 – Ongoing*

Johns Hopkins University — Baltimore, MD
B.S. Molecular and Cellular Biology — *Aug. 2016 – May 2020*

Peer-Reviewed Publications

[1] 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.

[2] 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.

Submitted Publications

[1] **Kevin W. Jin**, Yang Xie, Qiwei Li, and Guanghua Xiao. "Artificial intelligence in mental healthcare: a scoping review". In: *The British Journal of Radiology* (2023).

[2] 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).

[3] 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: *Journal of the American Medical Informatics Association* (2023).

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.

Publications In Progress

[1] **Kevin W. Jin**, Huimin Li, Bryn Brakefield, Stephen McKeown, and Qiwei Li. "Bayesian Clustering of n-gons via a Double Dirichlet Mixture Model". In: *Journal of the American Statistical Association* (2023).

[2] Ruichen Rong, **Kevin W. Jin**, Kristin Denton, Stephen Lyon, Carol A. Wise, Bruce Beutler, Qiwei Li, Jonathan J. Rios, and Guanghua Xiao. "Deep learning-based measurement of murine bone length in X-ray images". In: *Scientific Reports* (2023).

Presentations

[1] "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.

[2] "Adventures in Cluster Analysis: Approaching Shape Clustering". Talk delivered at the UT Dallas Joint Bioinformatics Seminar in Richardson, TX. Oct. 2022.

[3] "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.

[4] "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 (DREAMS) in Baltimore, MD. Apr. 2018.

Research Experience

Research Intern Sep. 2022 – June 2023

Advisor: Guanghua Xiao | UT Southwestern Medical Center *Dallas, TX*

- Help design an NLP pipeline that analyzes electronic health records to predict disease severity of cutaneous lupus erythematosus.

Research Assistant June 2022 – June 2023

Advisor: Qiwei Li | The University of Texas at Dallas *Richardson, TX*

- Develop `BACON`, an R package for a Bayesian shape clustering algorithm, in collaboration with others, resulting in a first-author publication.

Undergraduate Research Assistant Apr. 2019 – May 2020

Advisor: Soojung Claire Hur | Johns Hopkins University *Baltimore, MD*

- Optimized a microfluidic device that cultures prostate cancer cells and facilitates single-cell analysis of cell migration in response to odorant gradients; results were presented at JHU Undergraduate Research Symposium 2019.
- Fabricated liposomes as a model to assist the development of human-derived exosomes loaded with therapeutic agents for personalized medicine.
- Contributed to a MATLAB video analysis script determining microfluidic flow direction and taught Git version control to lab members.

Summer Research Intern July 2018 – Aug. 2018

Advisor: Debabrata Saha | UT Southwestern Medical Center *Dallas, TX*

- Assessed the radiosensitiziation efficacy of four DNA-dependent protein kinase inhibitors in conjunction with hypoxic environments on cancer cells (A549, Panc0327) prior to irradiation, using clonogenic assays and immunofluorescence.

Undergraduate Research Assistant Jan. 2018 – June 2019

Advisor: Steven S. An | Johns Hopkins Bloomberg School of Public Health *Baltimore, MD*

- Elucidated an inverse relationship between the expression of olfactory receptor OR51E2 and metastatic potential of prostate cancer using degenerate primer PCR, metastatic mouse models, and RNA-Seq of patient tumor samples; results were presented at JHU DREAMS 2018.
- Started an odorant profile of prostate cancer cells (PC3, LNCaP) by quantifying changes in cell stiffness upon exogenous agonist exposure using optical magnetic twisting cytometry.

Teaching Experience

Physics Learning Assistant Aug. 2019 – May 2020

Johns Hopkins University *Baltimore, MD*

- AS.171.107-108 General Physics for Physical Science Majors (Active Learning) I-II: Guided problem-solving for a flipped classroom of ∼50 students. <1% of students were selected as LAs.
- Terms: Fall 2019 (Prof. Robert Leheny), Spring 2020 (Prof. David Sing & Prof. Brice Ménard)

Biology Student Mentor Jan. 2018 – May 2020

Johns Hopkins University *Baltimore, MD*

- AS.020.151-152 General Biology I-II: Wrote official problem sets and study guides, held office hours, and proctored and graded exams. <1% of students were selected as SMs.
- Terms: Spring 2018 (Dr. Robert Shingles & Dr. Rebecca Pearlman), Fall 2018 (Dr. Robert Shingles & Dr. Rebecca Pearlman), Spring 2019 (Dr. Christov Roberson), Fall 2019 (Dr. Robert Shingles & Dr. Rebecca Pearlman), Spring 2020 (Dr. Robert Shingles & Dr. Rebecca Pearlman)

Professional Organizations

Member: American Medical Informatics Association, American Statistical Association