# 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*

- Graduated with General Honors
- Dean's List: Fall 2018, Fall 2019, Spring 2020 (not awarded due to COVID-19)

## Skills

**Coursework:** Data Visualization & Analysis, Computational Biology, Linear Algebra, Calculus, Discrete Mathematics
**Languages:** R, Python, C++, Java, MATLAB, LaTeX
**Developer Tools:** RStudio, VS Code, Jupyter Notebook, HPC, IntelliJ, Git, Linux

## Research Experience

**Research Intern** — Sep. 2022 – Present
*Advisor: Dr. Guanghua Xiao | UT Southwestern Medical Center* — *Dallas, TX*

- Perform text mining of electronic health records to improve clinical outcomes for cutaneous lupus erythematosus.
- Organize collaborations, collate results, and write manuscripts, resulting in three co-authorships and counting.

**Research Assistant** — June 2022 – Present
*Advisor: Dr. Qiwei Li | The University of Texas at Dallas* — *Richardson, TX*

- Develop `BACON`, an R package for a Bayesian shape clustering algorithm, resulting in a first-author publication.
- Evaluated BACON against k-means, hierarchical, and Gaussian mixture model clustering using the R package `SAFARI` and image datasets `MPEG-7` and `ETH-80`.
- Taught basic shape analysis and cluster analysis to three high school summer interns.

**Undergraduate Research Assistant** — Apr. 2019 – May 2020
*Advisor: Dr. Soojung Claire Hur | Johns Hopkins University* — *Baltimore, MD*

- Optimized a microfluidic device that harbors prostate cancer cells and exposes them to odorant gradients, provoking cell migration; results presented at JHU Undergraduate Research Symposium 2019.
- Contributed to MATLAB video analysis script that quantifies cell migration and taught Git to lab members.
- Composed a literature review of liposome and exosome-encapsulated drug delivery methods.

**Summer Research Intern** — July 2018 – Aug. 2018
*Advisor: Dr. Debabrata Saha | UT Southwestern Medical Center* — *Dallas, TX*

- Assessed the radiosensitization efficacy of four DNA-dependent protein kinase inhibitors in conjunction with hypoxic environments on cancer cells (A549, Panc0327) prior to irradiation.
- Composed a literature review of radiosensitization techniques and a report of my internship experience.

**Undergraduate Research Assistant** — Jan. 2018 – June 2019
*Advisor: Dr. Steven S. An | Johns Hopkins Bloomberg School of Public Health* — *Baltimore, MD*

- Elucidated inverse relationship between 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 presented at JHU DREAMS 2018.
- Started 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

**Undergraduate Teaching Assistant** — Jan. 2018 – May 2020
*Johns Hopkins University* — *Baltimore, MD*

- General Physics I-II: Guided flipped classroom problem solving for 50 students; <1% of students were selected as TAs.
- General Biology I-II: Wrote official problem sets and study guides; led one-on-one office hours; proctored and graded exams; <1% of students were selected as TAs.

## Professional Organizations

**Member**: American Statistical Association

## Publications

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

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

[3] Ruichen Rong, **Kevin 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". *Scientific Reports* (2023). In preparation.

[4] 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 Jin**, Curtis R. Pickering, and Guanghua Xiao. "A deep learning Onion Peeling approach to measure oral epithelium layer number". *Cancers* (2023). Submitted.

[5] Ruichen Rong, Hudanyun Sheng, **Kevin 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". *Modern Pathology* (2022). Preprint published.

## Presentations

[1] "Bayesian Clustering of n-gons via a Double Dirichlet Mixture Model". Talk, Texas Oklahoma Regional Undergraduate Symposium. 2023.

[2] "Adventures in Cluster Analysis: Approaching Shape Clustering". Talk, UT Dallas Bioinformatics Joint Seminar. 2022.

[3] "Generating Microfluidic Gradients for the Study of an Olfactory Receptor involved in Prostate Cancer Metastasis". Talk, Johns Hopkins Undergraduate Research Symposium. 2019.

[4] "Could olfactory receptors modulate prostate cancer metastasis?" Poster, Johns Hopkins Day of Undergraduate Research in Engineering, the Arts & Humanities, Medicine and the Sciences (DREAMS). 2018.