



# Kaito Kikuchi

## Computational Biology & Data Scientist

### PERSONAL INFO

📍 San Diego, California, USA  
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### TECHNICAL SKILLS

- **Python:** Proficient in the data science stack including Pandas, NumPy, SciPy, Scikit-learn, Matplotlib, Streamlit
- **ML/AI:** Experienced in Pytorch, MLOps with Valohai, CNNs, clustering, LLMs
- **Image Analysis:** ImageJ/FIJI, OpenCV, QuPath
- **Biological data:** Confocal & fluorescence 2D/3D microscopy, histopathology whole slide images, protein-protein interaction networks, metabolic time-series data, Neuropixel activity readings, DNA/RNA sequences
- **Other:** Linux/UNIX, Google Cloud Platform (GCP), Clojure, Julia, R, MATLAB

### VOLUNTEERING

- **UJA, Inc:** Advocation group for overseas Japanese researchers. Currently serving as the the translational research working group chair. Organized monthly online seminars, participated in fundraising, and chaired panel discussions.

### LANGUAGES

- **English:** Native fluency
- **Japanese:** Native fluency
- **German:** Elementary

### INTERESTS

Pottery/Cooking/Biking/Baking/Kintsugi

### WORK EXPERIENCES

- **Manager, Computational Biology**  
Reveal Biosciences, USA  
Aug 2023 - Present
  - Leading the computational biology/image analysis team with 5 direct reports.
  - Developed automated analysis pipelines and train machine learning models for digital pathology.
  - Built an internal data QC webapp in Python for outlier detection and data visualization.
  - Conducted comprehensive data analysis for product verification.
  - Acting as the technical expert on AI pipeline development within the company.
  - Serving as the product owner of flagship WSI viewer software, imageDX.
- **Image Analysis Scientist**  
Sep 2022 - Aug 2023
- **Graduate Research Assistant**  
University of California San Diego, USA  
Sep 2016 - Jun 2022
  - Investigated how bacterial spores use electrochemical charges to return to life by combining molecular genetics, single-cell imaging, microfluidics, and data science.
  - Designed experimental methods for imaging spore germination within a microfluidics device.
  - Analyzed image data by stabilize image drift, tracking spores, and extracting image features.
  - Performed data analysis in Python, including data parsing, time series analysis, statistical validations, and publication-ready data visualizations.
- **Research Assistant**  
Systems Biology Institute, Japan  
Apr 2013 - Aug 2016
  - Participated in bioinformatics projects aiming to locate drug-targets from protein-protein interaction (PPI) networks.
  - Developed a novel network mining method by sequentially applying clustering algorithms.
  - Applied clustering technique to MRSA, refining the module analysis step to use an ensemble voting method with 10 classification algorithms to predict drug targets.

### EDUCATION

- **University of California San Diego**  
Sep 2016 - Jul 2022  
**Ph.D. Biology** with specialization in quantitative biology
- **University of Tokyo**  
Apr 2014 - Mar 2016  
**M.A. Biophysics** with a focus in single-cell live imaging
- **International Christian University**  
Apr 2010 - Mar 2014  
**B.A. Biology** with a focus in microbial genetics and DNA repair

### PUBLICATIONS

**Kikuchi K**, Galera-Laporta L, Weatherwax C, Lam J, Moon E, Theodorakis E, Garcia-Ojalvo J, Süel GM. *Electrochemical potential enables dormant spores to integrate environmental signals.* **Science.** Oct 2022.

Zhai X, Larkin JW, **Kikuchi K**, Redford SE, Roy U, Süel GM, Mugler A. *Statistics of correlated percolation in a bacterial community.* **PLoS Comp Bio.** Dec 2019.

Larkin JW, Zhai X, **Kikuchi K**, Redford SE, Prindle A, Liu J, Greenfield S, Walczak AM, Garcia-Ojalvo J, Mugler A, Süel GM. *Signal percolation within a bacterial community.* **Cell Systems.** Aug 2018.

Hill S, et al. [HPN-DREAM Consortium, including **Kikuchi K**]. *Inferring causal molecular networks: empirical assessment through a community-based effort.* **Nature Methods.** Apr 2016.

Hase T, **Kikuchi K**, Ghosh S, Kitano H, Tanaka H. *Identification of drug-target modules in the human protein-protein interaction network.* **Artificial Life and Robotics.** Dec 2014.