



Kaito Kikuchi

Computational Biology & Data Scientist

WORK EXPERIENCE

○ **Manager, Computational Biology**
Reveal Biosciences, USA
Aug 2023 - Present

- Leading the computational biology/image analysis team with 5 direct reports.
- Developed image analysis pipelines and trained deep 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

- 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 stabilizing 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.

○ **Graduate Research Assistant**
University of California San Diego, USA
Sep 2016 - Jun 2022

- Participated in bioinformatics projects that aimed 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 and refined the module analysis step to use an ensemble voting method with 10 classification algorithms to predict drug targets.

○ **Research Assistant**
Systems Biology Institute, Japan
Apr 2013 - Aug 2016

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 and optogenetics

○ **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.

PERSONAL INFO

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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