CV Kaito Kikuchi

QBio PhD Candidate

CONTACT

Email_ kaito@ucsd.edu

Twitter_ @kaitochondria

RESEARCH SKILLS

Experimental Design / Microscopy / Statistical Analysis / Deep Learning / Image Analysis / Data Visualization / Network Clustering / Classification

TECHNICAL SKILLS

Python

R

Fiji/ImageJ

MATLAB

Clojure

Illustrator

EDUCATION

#Sep 2016 > Present
PhD Candidate @ University of California, San Diego (San Diego)
Biological Sciences with Specialization in Quantitative Biology

Biology Graduate Student Council Rep (2020-2021 term)

Neuromatch Academy - Deep Learning Interactive & Project Track

#Apr 2014 > Mar 2016
Master of Arts @ University of Tokyo (Tokyo)
Research in bacterial cytoplasm biophysics and optogenetics

#Apr 2010 > Mar 2014
Bachelor of Arts @ International Christian University (Tokyo)
Biology Major
Editor-in-chief of weekly student newspaper

EXPERIENCE

Sep 2016 > Present
PhD Candidate @ University of California, San Diego [San Diego]
Investigating how bacterial spores use electrochemical charges to return to life by combining molecular genetics, fluorescence microscopy, and data analysis.

- Obtain time-lapse microscopy data for thousands of spores in a microfluidics device.
- Analyze image data in Fiji/ImageJ using custom macro to stabilize drift and extract image features.
- Process data in Python using Pandas and NumPy to detect spore germination, perform statistical analyses, and generate publication-ready data visualizations.
- First-author manuscript currently under review (see Publications).

Apr 2013 > Aug 2016
Student Research Assistant @ The Systems Biology Institute (Tokyo)
Participated in bioinformatics research projects aiming to locate drug-target proteins from protein-protein interaction (PPi) networks.

- Developed a novel network mining method by sequentially applying clustering algorithms in R.
- Co-authored paper for identifying a submodule within the Human PPi network enriched with 40% of known kinase inhibitor targets.
- Participated in the Sage DREAM8 competition and ranked among the top 5 in the visualization sub-challenge.
- Led a project to apply clustering technique to Methicillin-Resistant Staphylococcus aureus (MRSA), refining the module analysis step to use an ensemble voting method comprised of 10 different machine learning algorithms to predict drug targets.
- Accepted to the 8th Asian Young Researcher's Conference on Omics and Computational Biology as an oral presentation with travel grants awarded (acceptance rate < 25%).

Nov 2010 > Aug 2016
President @ Shoyojuku Private Tutoring (Tokyo)
Founded and ran a tutoring service for local secondary school students.

- Identified an underserved market of local students struggling to keep up with school.
- Managed a team of up to 8 part-time tutors, overseeing scheduling, pay, classroom renting, coordination with parents and school teachers, among other responsibilities.
- Taught mathematics, biology, Japanese, and English to students ranging from 7th to 12th grade, including preparations for college entrance exams.
- Helped students get into their dreams schools, including top-ranked Keio University.
- Paid twice the average tutor wage while maintaining competitive tuition rates.

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PUBLICATIONS

Manuscript under review

Kikuchi K, Galera-Laporta L, Weatherwax C, Lam J, Theodorakis E, Garcia-Ojalvo J, Süel GM "Electrochemical Potential Enables Dormant Spores To Integrate Environmental Signals"

Dec 2019

Zhai X, Larkin JW, Kikuchi K, Redford SE, Roy U, Süel GM, Mugler A "Statistics of correlated percolation in a bacterial community" PLoS Computational Biology

Aug 2018

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

Feb 2016

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

Nov 2014

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

FELLOWSHIPS AND AWARDS

Sep 2021

Best Student Speaker Award @ UC San Diego Biological Sciences - Salk Retreat 2021

Oct 2020 > Sep 2021

The ANRI Fellowship @ ANRI

Sep 2016 > Aug 2019

Overseas Graduate Scholarship @ Japan Student Support Organization

Apr 2016 > Aug 2016

Research Fellowship DC1 @ Japan Society for the Promotion of Science

Mar 2016

Outstanding Graduate Student Award @ University of Tokyo

Jan 2015

AYRCOB Travel Grant @ 8th Asian Young Researcher's Conference on Computational and Omics Biology (AYRCOB)

Apr 2014 > Mar 2016

Integrated Human Sciences Graduate Program Fellow @ University of Tokyo

Mar 2014

Takuya Tokihisa Biosciences Award @ International Christian University

Apr 2010 > Mar 2014

Peace Bell Scholar @ International Christian University

LANGUAGES

Native fluency in English and Japanese

INTERESTS

Cooking/ Carving / Baking /Surfing / Biking / Pottery / Gardening / Kintsugi