Shunsuke Kikuchi

Los Angeles, CA | shunkikuchi2111@ucla.edu | LinkedIn | github

EDUCATION

- **Shonan Senior High School,** Fujisawa, Kanagawa, Japan — Graduation: March 2021

  Known as one of the best public senior high schools in Japan.

- **Arkansas State University,** Jonesboro, AR — (Left for transfer, August 2023)

  Bachelor of Science in Exercise Science (GPA: 4.0)

- **University of California, Los Angeles** (Current) — Expected Graduation: Spring 2025

  Bachelor of Science in Computational and Systems Biology

ACTIVITY & ACHIEVEMENT

Kaggle competition: Expert, Highest Rank: **2,552/205,373**

- **Leash Bio - Predict New Medicines with BELKA** (**Silver medal, 27/1950**, 2024 Apr. – Jul.)

  This competition on Kaggle invites participants to forecast the efficacy of potential new medicines. This competition aims to accelerate drug discovery by enabling more precise predictions of drug outcomes based on biological data.

HMS - Harmful Brain Activity Classification (**Bronze medal**, **245/2767**, 2024 Jan. – Apr.)

This competition focuses on developing models to detect dangerous brain wave patterns using EEG data. This challenge aims to enhance medical diagnostics for neurological disorders.

Conference Challenge:

MICCAI – Endoscopic Vision Challenges 2024 : Oral presentation of top-awarded solutions at MICCAI 2024

- **SegCol** (Task1: Waiting Updates, Task2: Waiting Updates)
  4-class segmentation challenge focused on colorectal cancer screening using colonoscopy frames. Developed models to segment anatomy edges and instrument masks. Contributed to two tasks: custom model design and active learning for selecting key frames.

- **Open Suturing Skills Challenge** (Task1: Waiting Updates, Task2: Waiting Updates)

  This challenge aimed at classifying surgical suturing skills using videos from a simulated environment. The challenge involved two tasks: predicting the total Global Rating Score (GRS) and the full OSATS scoring table for each video. This automated feedback system helps surgeons refine their suturing skills, with the goal of improving surgical performance and patient outcomes.

- **Surgical Tissue Tracking Using the STIR (Surgical Tattoos in Infrared) Dataset** (Task1, 2: Waiting Updates)

  Participated in the STIR Challenge, focused on predicting surgical instrument trajectories in robotic surgery. The challenge involves using kinematic and video data to estimate precise instrument positions, aiming to improve surgical outcomes by enhancing tracking and performance evaluation in real-time.

6th National Medical AI Contest in Japan (**4th prize**, 2024 Mar., Awarded **$100**)

This conference challenges participants to create AI models that can diagnose and predict medical conditions from complex datasets. This competition is aimed at advancing the application of artificial intelligence in healthcare by improving diagnostic accuracy and predictive analytics.

Research Poster Presentation

Create@State (Apr 18, 2023, Arkansas State University)

"Inhibition of Cephalic Pain By RgIA4, A Selective a9a10 Nicotinic Acetylcholine Receptor (nAChR) Antagonist"

BIG Summer Final Session (Aug. 16, 2024, UCLA)

"scGRNdb - Cell Type Level Gene Regulatory Network Database for Single-cell Analysis Framework"

Volunteer

- Access and Accommodation Services, Arkansas State University, 2021 Fall – 2023 Spring

  Note-Taker volunteers for students with disabilities.

ACADEMIC HONORS and SPECIAL AWARDS

Private funded Scholarship

Shonan Senior High School Alumni Foundation Scholarship for Overseas Study, 2021, $5000

URC-sciences summer, 2024 summer, $4800

Arkansas State University

ABI Undergraduate Research Scholarship, 2021 Fall - 2022 Spring

Chancellor's List, 2021 Fall, 2022 Spring, 2022 Fall, 2023 Spring

Honors College, 2022 Spring – 2023 Summer

University of California, Los Angeles

Honors Program, 2023 Fall – Present

WORK & RESEARCH EXPERIENCE

・**Research Assistant** (paid-position), 2021 Fall - 2023 Summer, Arkansas State University

Engaged in migraine studies at Dr. Xie's Lab at Arkansas State University, especially the project dealing with mice. Performed injections, behavioral testing, cardiac perfusion, blood collection, and tissue collection/slicing. Mice project leader in 2023 Summer.

・**Undergraduate Research Assistant**, 2023 Fall – Present, UCLA

Currently working in Dr. Xia Yang's Lab at UCLA. In two projects, one examines the relationship between air pollution and atherosclerosis from single-cell data, and the other designs an unsupervised learning model to predict gene networks from single-cell data.

・**Bruins-In-Genomics (B.I.G.) Summer Program Researcher**, 2024 Summer, UCLA

Participated as a student scholar in Dr. Yang's Lab. Developed an analysis pipeline for single-cell data using Gene Regulatory Networks. Constructed and validated the pipeline, including mathematically plausible graph clustering methods and filtering of cell-type GRNs by Disease Modeling.

・**Internship**, 2024 Spring – Present, Jmees (Tokyo, remote)

Currently doing an internship at a company developing AI-assisted surgical systems for endoscopic surgery in Japan. Engaging in the development of an AI-assisted surgical support system aimed at enhancing the safety of endoscopic surgeries. Contributed to the development of a system that utilizes AI to visualize anatomical structures, thereby supporting surgeons in accurate organ recognition and promoting safer surgical practices. Participating in MICCAI EndoScopic Challenge.

CAREER PLANS

- Ph.D. in Computational Biology / Computational Medicine

  This is the essential requirement for becoming an academic researcher. Look for programs with strong research groups aligned with my interests and faculty members with expertise in both computational and biological domains, especially integrating Deep Learning into biology and medicine.