Kai Kitagawa-Jones

Education

- MSc Computational Biology & Bioinformatics, ETH Zürich, Switzerland (Aug 2024 –)
  - Primarily molecular/cellular/synthetic biology, genetics, image processing, big data, and software engineering
  - Lab rotation at Bio Engineering Laboratory
- BSc Data Science and Artificial Intelligence, Maastricht University, Netherlands (Aug 2021 – Jun 2024)
  - Primarily statistics, data science, machine learning, signal processing, and image processing
  - Semester group research projects — "The 2D/3D bin packing problem" and "Golf simulator and physics solver"
  - Selected for KE@work honours programme — internship at i-Med Technology
  - Bachelor's Thesis — "Real-Time Segmentation Of Nerve And Fat Tissue In Hyperspectral Images Using Small Numbers Of Spectral Bands"
- Maths/science course, Maibara Senior High School, Maibara, Japan (Apr 2018 – Mar 2021)
  - Studied maths, physics, chemistry, biology and geology at a high level
  - 1-year group research project — "The memory of medaka" (a fish native to Japan)

Professional experience

- Research intern, i-Med Technology, Netherlands (Aug 2022 – Jun 2024, Feb 2025 – Jul 2025)
  - A biotechnology company developing surgical head-mounted digital microscopes for use in hospitals
  - Development/implementation of real-time exposure fusion — synthesize HDR images from non-HDR images
  - Development/implementation of automatic exposure control techniques, for use with real-time exposure fusion
  - Joint project with Quest Medical Imaging, Maastricht UMC, and University of Twente — real-time tissue type classification using hyperspectral imaging, including data collection, data cleaning, model training, and hardware implementation
- Lab rotation, Bio Engineering Laboratory, ETH Zürich, Switzerland (Sep 2025 – Dec 2025)
  - Research in the fields of neuroscience and biosensing, using high-density CMOS microelectrode arrays (MEA)
  - Development/implementation of reliable control/recording software for MEAs — control FPGAs from desktop systems
  - Development/implementation of fast signal filtering/analysis tools — used to ensure MEAs are correctly setup, and recordings do not contain unexpected anomalies or excessive noise

Personal projects

- stack_lang
  A stack-based programming language
- microcompute
  A Vulkan general purpose GPU computing library
- DOI Lookup
  A tool for looking up research articles
- VoxRen
  A voxel-based ray tracer
- ptmv
  A terminal app for displaying images and videos

For more, see projects.kaikitagawajones.com

Personal details

- Nationality Japanese and British
  (also Spanish residency)
- Born 3 April 2002 (City of York, UK)

Programming skills

Languages: C, C++, Rust, Java, Lua, Python, MATLAB, R

General skills:

- Machine learning (PyTorch, TensorFlow, sklearn, ...)
- Image processing (OpenCV, libvips; in C, C++, Python)
- GPU programming (CUDA, OpenCL, Vulkan)
- Graphics programming (OpenGL, Vulkan)

Interests

- Photography — photos.kaikitagawajones.com
- Remote-controlled planes — design, build, and fly
- Art — former winner of Hikone City Mayor's Prize (Japan)

- Languages English, Spanish, and Japanese
- Website kaikitagawajones.com
- Email kaikitagawajones@gmail.com