Eric Hidari

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ABOUT ME

Research software engineer with a career-long focus on biosciences. I have experienced approaching the academic and technical worlds from both directions, and I want to leverage my understanding to design effective software-driven automation to benefit scientific research.

SKILLS

Programming
Python, Jupyter, Javascript, R, MATLAB, Shell script

Technologies
Jupyter, Jira, AI-assisted programming, PostgreSQL, Spack, Docker, Singularity

Languages
English, Mandarin Chinese, Japanese

AWARDS

2016 - 2019 - Cambridge Trust Full Scholarship for PhD studies

2015 - 2016 - Procter & Gamble / Durham University Bursary for Year in Industry Project

EDUCATION

University of Cambridge, Cambridge, UK - Ph.D. in Chemistry
2016 - 2021
Thesis: Investigating the Role of Protein Aggregation in Neurodegenerative Diseases using Super-Resolution Imaging. Supervised by Prof Sir David Klenerman, FRS.

University of Durham, Durham, UK - Master of Chemistry
2015 – 2016
First Class Honours.
Thesis: Procter & Gamble industrial research project.

Peking University, Beijing, China - Bachelor of Science - Chemistry
2012 – 2016

LINKS

 GitHub   in LinkedIn

WORK EXPERIENCE

Wellcome Sanger Institute, UK - Senior Software Developer   Apr 2023 - Now
- System administrator for an internal software installation tool for the Sanger computing cluster. Within 10 months' time, managed more than 500 recipes of bioinformatics and machine learning libraries using Spack.
- Led the migration of the informatics service desk from a legacy platform to Jira. Set up automated issue transition, reminders, and reporting.
- Developed the Flask back-end and Vue.js front-end of a research data portal web application hosted in a microservice architecture with Docker.
- Maintained and Improved CI/CD processes for deploying applications across multiple environments and facilitating product releases, utilising Makefiles and GitLab pipeline scripting.

Vidya Holdings Ltd., London, UK - Software Engineer   Oct 2021 - Mar 2023
- Developed image analysis algorithms for high-throughput reading of single-molecule bioassays. Automated workflows and improved the speed of image analysis software, saving over 60% of user time and 30% of computation time.
- Deployed image analysis software as a microservice on a remote Linux server using Kubernetes-orchestrated Docker containers. Interact with users and manage the job queue with FastAPI, Celery, and Redis.

University of Cambridge - Postdoctoral Research Associate   Oct 2020 – Sep 2021
- Studied the quantity and spatial distribution of tau protein in brain slices from patients with various neurodegenerative diseases using digital pathology analysis.
- Built a PostgreSQL database for efficient management and fast querying of the large image dataset.

University of Cambridge - Ph.D. Student and Teaching Assistant   Oct 2016 - Sep 2020
- Developed a novel microscopic imaging technique for protein aggregates associated with neurodegenerative diseases, and used it to study the size and population of protein aggregates collected from patient-derived stem cells.
- Developed software programs for automated data acquisition and analysis of single-molecule fluorescent microsopic images.
- Developed a mathematical model for the simulation of biochemical kinetics. Applied simulated annealing to the inference of model parameters.
- Collaborated with cell biologists and neurologists at the Addenbrookes Hospital site in Cambridge. Chaired and organised monthly meetings for two and a half years with collaborators and supervisors from different academic backgrounds.
- Built a laser optical microscope in a newly established institute. Responsible for the day-to-day maintenance of the shared microscope for two years without major failure. Provided user training for the microscope.

Procter & Gamble Ltd., Newcastle, UK - Research Intern   Aug 2015 – June 2016

PUBLICATION

- *In vivo* rate-determining steps of tau seed accumulation in Alzheimer's disease. Science advances, 2021.
- A general *in vitro* assay to study enzymatic activities of the ubiquitin system. Biochemistry, 2020.
- Nanoscopic characterisation of individual endogenous protein aggregates in human neuronal cells. ChemBioChem, 2018.

Full list: Google Scholar, https://t.ly/BuRUS

PROJECTS

AI Hackathon, Wellcome Genome Campus, UK - Project Lead   May 2024
- Created an AI chatbot with locally hosted open-sourced large language model and integrated it with Slack. Provided guidance for other participants to modify the prompts and create their own versions of the chatbot.

i.school, Tokyo University - Innovation Coach   Jul 2019 – Aug 2019
- Coached local high school students throughout the programme with a focus on innovative designs and business strategies in small- to medium-size enterprises.