Joyce Kao, Ph.D.

Data Science.
Web Development.
Open Science.

- 👤 01 Nov, 1984
- 🌐 US citizen, Swiss B permit
- ✉ 8049 Zürich
- 📞 +41 78 692 61 77
- @ joyce@jykao.com

About Me

Highly-adaptable, detail-oriented problem solver with data science and web development skills promoting open life science collaborations. Over 10 years coordinating and managing internationally collaborative projects.

Technical Skills

🔲 **Data Science** ●●●●●
- 🛠 A/B testing, Regression, Clustering, Survival Analysis, Machine Learning
- >_ R, Python

🖼 **Image Analysis** ●●●●○
- 🛠 Segmentation, Classification
- >_ Fiji, ilastik, CellProfiler, Icy

🖥 **Web Development** ●●●○○
- ◯ Github: joyceykao
- >_ Ruby on Rails, Node/Express, git, JavaScript, HTML 5, CSS, SQL, React

Languages

- 🇬🇧 English (native) ●●●●●
- 🇨🇳 Chinese (native) ●●●●○
- 🇩🇪 German (B1) ●●●○○

Selected Experiences

2019 Oct–present

Program Director/Co-founder ETH Zürich/University of Zürich
Established the **Open Innovation in Life Sciences Association**, a unit of Life Science Zurich, that promotes the practice of open science through events and provides soft-skill career training among early career life scientists.
https://www.openinnovationlifesciences.com/

Key Responsibilities & Contributions:

- Driving program development, establishing strategic partnerships, preparing fundraising documents, and managing external advisory board.
- Building and maintaining online platforms for event management, social media, and internal wiki knowledge base.
- Recruiting, supervising, and mentoring planning committees in organizing the annual Open Innovation in Life Sciences conference.

2018 Dec – present

Freelance Consultant JY Kao Consulting Services
Recommending and implementing data analyses, web solutions, and community building strategies.

2020 Aug–2021 Jan

Full Stack Data Scientist Raumgleiter AG
On the interactive web applications team to build an online marketing tool for streamlining the sales process of construction projects

Key Responsibilities & Contributions:

- Set up and refined agile protocols for the web development team using GitLab and documented team code workflow
- Created organizational and operational framework for company design system
- UX/UI design using Figma & Adobe XD, and implemented content management system.

2019 May–2020 Apr

Postdoctoral Scientist ETH Zürich
Developing root architecture variation data pipelines while assisting a new lab at the Institute of Plant Biology establish information/communication infrastructure.

Key Responsibilities & Contributions:

- Building image analysis workflows to analyze various types of image data.
- Setting up and advising on basic lab informatics structure (i.e. lab communications, lab operational wiki, ordering systems, seed stock database, etc.).
- Designing experiments investigating root architecture in *Arabidopsis arenosa* by streamlining workflows for experimental, data collection, and analysis protocols.

2014 – 2019

Postdoctoral Fellow New York University
Awarded the NIH Ruth L. Kirschstein Research Service Award to conduct research on effects of genetic backgrounds on chromatin gene perturbations.

Key Responsibilities & Contributions:

- Coordinated a team of eight members to perform gene knockouts in over 400 lines of *Drosophila melanogaster*
- Collaborated with the lab of Ernst Hafen at ETH Zürich to develop an image-based high-throughput assay for quantifying spatial color patterns of insect eyes.

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Other Skills —————

- Project Management Tools: Asana, Trello, Toggl
- Methodology: Agile (Scrum, Kanban)
- Communication: Slack, Glip, MS Teams
- Google Suite: Sheets, Docs, Slides, Cal, etc.

Memberships ———

Project Management Institute

Network of European Bioimage Analysts

Hobbies —————

- Photography, Sewing, Crocheting
- Yoga, Running, Traveling

Education

Degrees

2006 – 2014	**Ph.D. in Computational Biology**	**University of Southern California**
	Publications: bit.ly/jykpub	
2003 – 2006	**B.S. in Mathematics**	**The University of Texas at Austin**
	with honors	
2003 – 2006	**B.A. in English**	**The University of Texas at Austin**
	with honors and minor in Biology	

Continuing Education

March 2020	Business Foundations	Quantic School of Business and Technology
Spring 2020	Full Stack Web Development	Le Wagon Switzerland
Fall 2019	Grundgrammatik: Deutsch A2-B1	Sprachzentrum der UZH & ETHZ
Mar 2019	Business Creation in ICT	Venture Labs

Extracurricular Activities

Volunteering for events, organizations, & initiatives to give back to the community.

2014-2020	**Science Ambassador Scholarship (Judge)**	Cards Against Humanity
	Reviewing annual applications for four-year, full-tuition college scholarship supporting undergraduate women studying in STEM fields.	
2016-2020	**Akademischer Mittelbau am Departement Biologie (Communications Officer)**	ETH Zürich
	Scientific staff association shaping departmental policies. Responsible for strategic partnerships with local organizations.	
2-5 Feb, 2019	**NEUBIAS ECI Bioimage Analysis Training School (Co-Organizer)**	Esch-sur-Alzette, Luxembourg
	Curated course content and organized trainers to teach image processing and analysis for the 3rd annual Network of European Bioimage Analysts (advanced) Early Career Investigators Training School.	
2012, 2014	**Annual ISMB conference (Lead Volunteer)**	multiple locations
	Coordinated 30 volunteers at the 20th and 22nd Annual International Conference on Intelligent Systems for Molecular Biology	

Scientific Communications

Selected Publications (Full List @ https://bit.ly/jykpub)

2021	Quantifying position effect variegation in *Drosophila melanogaster*. Bioimage Data Analysis Components and Workflows. Springer Learning Materials in Biosciences textbook. *In Press*
2020	The Drosophila post-mating response: gene expression and behavioral changes reveal perdurance and variation in cross-tissue interactions. G3. DOI: 10.1534/g3.119.400963
2019	EvoChromo: towards a synthesis of chromatin biology and evolution. Development. DOI: 10.1242/dev.178962
2015	Population genomic analysis uncovers African and European admixture in Drosophila melanogaster from the southeastern United States and Caribbean Islands. Molecular Ecology. DOI: 10.1111/mec.13137

Outreach Videos

2018	The Company of Biologists EvoChromo Workshop: https://youtu.be/VjcuAZYxWwI
2017	Using flies to study cryptic genetic variation: https://wp.nyu.edu/siegal/cryptic-genetic-variation/