Yifan Zhao

Last update on February 2, 2021

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Education

Massachusetts Institute of Technology — Cambridge, United Sates
PhD in Medical Engineering and Medical Physics — *2020 – present*

McGill University — Montreal, Canada
Honours BSc in Computer Science and Biology — *2017 – 2020*

- First Class Honours with Distinction
- Dean's Honour List(2018)

Centennial Secondary School — Coquitlam, Canada
British Columbia Dogwood Diploma — *2015 – 2017*

- Governor General's Academic Medal (2017)
- National Biology Scholar with Distinction (2017)
- British Columbia International Student Ambassador Scholarship (2017)

Research Experience

Rotation Student, Park Lab
Cambridge, United States (remote) — *Sep '20 – present*

- Copy number analysis on low coverage human glia samples

Summer Research Intern, Li Lab
Montreal, Canada — *May '20 – Aug '20*

- Developed single-cell Embedded Topic Model (scETM), a Bayesian inference model that learns interpretable cellular and gene signature embeddings from single-cell trancriptomic data

Honours Research Student, Gerhold Lab
Montreal, Canada — *May '19 – May '20*

- Developed CentTracker, an automated analysis pipeline for centrosome tracking and pairing
- Conducted *in situ* live-cell imaging experiments of *C. elegans* germline stem cells

Research Assistant, Yamanaka Lab
Montreal, Canada — *Dec '18 – Apr '19*

- Automated dynamic MiSeq sequencing data analysis
- Quantified and classified Cas9 RNA-guided endonucleases off-target sites to identify the clonal selection patterns during cancer progression in mice models of ovarian cancer

Research Student (BIOC396 Project), Akavia Lab
Montreal, Canada — *Jan '19 – Apr '19*

- Assessed protein localization prediction in a human genome-scale metabolic model

Summer Research Intern, Canada's Digital Health Hub
Surrey, Canada | Supervisors: Dr Greg Christie & Dr Andrey Zhdanov — *Jul '18 – Aug '18*

- Tested biosensors for stress stimulation experimental design
- Operated electroencephalography (EEG) tests for healthy and autistic children

Publications

1. Zellag M. R., **Zhao Y.,** Poupart V., Singh R., Labbé J-C., Gerhold A. R. (2021). CentTracker: a trainable, machine learning-based tool for large-scale analyses of C. elegans germline stem cell mitosis. Molecular Biology of the Cell, mbc-E20.
2. **Zhao, Y.***, Cai, H.*, Zhang, Z., Tang, J., Li, Y. (2021). Learning interpretable cellular and gene signature embeddings from single-cell transcriptomic data. bioRxiv. **Equal Contribution*

Awards & Scholarships

- Jacqueline Johnson Desoer Science Undergraduate Research Award (2020)
- Sheila Ann MacInnis Grant Undergraduate Research Award (2019)
- James McGill Scholarship (2017-2020)
- E Gordon Edwards Biology Award (2019)
- Faculty of Science Scholarship (2019)
- Governor General's Academic Medal (2017)
- National Biology Scholar with Distinction (2017)
- British Columbia International Student Ambassador Scholarship (2017)

Teaching & Volunteering

Undergraduate Teaching Assistant, McGill University
MONTREAL, CANADA *Jan '19 – Dec '19*

- MATH 240 Discrete Structures (Fall 2019)
- MATH 324 Statistics (Winter 2019)

Media Relations Volunteer, Canadian Cancer Society (BC & Yukon Division)
VANCOUVER, CANADA *Nov '16 – Aug '18*

- Translated and reviewed promotion and education materials on cancer prevention
- Composed wellness-related articles for publication in Herald Monthly, a Vancouver-based not-for-profit monthly Chinese magazine

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Proficiencies

- **Natural Languages:** English, Mandarin Chinese, French, Wenzhounese
- **Programing Languages**: Python, C++, R
- **Confocal Spinning Disk Microscopy:** Visualization of fluorescent molecules in *C. elegans* germline stem cells, time-lapse photography of *C. elegans* dividing cells
- ***C. elegans* Care and Husbandry:** Bleaching, worm picking, strain maintenance, whole-mounting