

Feifei Li

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EDUCATION

University of Toronto

Honours Bachelor of Science

Toronto, ON

May, 2018 - June, 2023

- Specialist in Bioinformatics and Computational Biology
- Major in Statistics
- Graduated with Distinction


EXPERIENCE

Peter Munk Cardiac Centre, University Health Network

September 2022 – Present

Research Intern

Toronto, ON


- Built pipelines for processing 19 CT and 12 MRI datasets from the Cancer Imaging Archive (TCIA) in one week.
- Contributed to the development of the medical image foundation model MedSAM ; benchmarked the model against U-Net and DeepLabV3+ specialist models and performed evaluation for segmentation results of **86 internal validation tasks** and **60 external validation tasks**
- Distilled MedSAM's heavy ViT, reduced by **15 times** in size and boosted inference by **10 times** in speed
- Improved the classification accuracy of a pathology image foundation model on *BRCA* mutations in whole slide images of ovarian cancer from 24% to **74%** by developing a transformer-based multi-instance learning framework

Princess Margaret Cancer Centre, University Health Network

May 2022 – December 2022

Research Student | R package developer

Toronto, ON

- Supervised by Dr. Benjamin Haihe-Kains in analysing synergistic effects of drug combinations on cancer cell lines
- Investigated four scoring models for quantifying synergistic effects of drug combinations.
- Implemented drug synergy models for R package *PharmacoGx* ; **3800+** downloads since the update release

SKILLS

Languages: R (expert), Python (advanced), Linux shell  (advanced), Java  (intermediate), C (intermediate)


Developer Tools: SVN and **git** (advanced), SLURM (advanced), Conda (advanced), Docker (intermediate)

Libraries: PyTorch (advanced), NumPy (advanced), Pandas (advanced), Bioconductor (advanced)

PUBLICATIONS

- Ma, J., He, Y., **Li, F.**, Han, L., You, C., and Wang, B.: Segment Anything in Medical Images. *Nature Communications* 15, 654 (2024)

Working Drafts:

- Ma, J., **Li, F.**, Wang, B., U-Mamba: Enhancing global representations with structured state spaces for medical image segmentation 

ADDITIONAL EXPERIENCE

CVPR 2024 Workshop: Foundation Models for Medical Vision | Coordinator

January - June 2024

- Developed the baseline model for the workshop challenge, responsible for evaluating submitted solutions.

STEM Fellowship Big Data Challenge 2020 | R, Decision tree, PCA

May 2020

- Statistical analysis to explain severity of COVID-19 transmission in 144 countries based on their economic development and population health status.