Farica Zhuang

in https://linkedin.com/in/faricazhuang | 🌐 https://faricazjj.github.io | ✉ farica@seas.upenn.edu |

EDUCATION

University of Pennsylvania — August 2021 - present
Doctor of Philosophy (PhD); Computer Science

Duke University — August 2018 - May 2020
Master of Science (MS); Computer Science

UC San Diego — July 2016 - June 2018
Bachelor of Science (BS); Applied Mathematics, minor in Computer Science

Foothill College — August 2014 - June 2016
Associate in Science (AS); Mathematics

WORK EXPERIENCE

Deep Learning TA — Comp Sci, UPenn
ESE 546 Principles of Deep Learning Teaching Assistant — August 2022 - present

Eureka by SAP — Newport Beach, CA
Software Engineer — May 2020 - August 2021

Python Course Developer — School of Nursing, Duke
Introduction to Python online course developer — January 2019 - May 2020

Gordan Lab — Comp Sci, Duke
Computational Biology Research Assistant advised by Prof. Raluca Gordan — January 2019 - May 2020

Machine Learning Engineer — School of Nursing, Duke
Research Assistant for Prof. Michael Cary, Chair of School of Nursing — January 2019 - May 2020

CS 101 TA — Comp Sci, Duke
Teaching Assistant for Compsci 101: Introduction to Computer Science — January 2019 - May 2020

Teradata — Rancho Bernardo, CA
Software Engineer Intern — June 2018 - August 2018

ONGOING PROJECTS

Modeling RNA secondary structures and variants that affect them

Developed a bert-based model using transcriptomic sequences to model RNA secondary structure formation in the non-coding regions. Studying the mechanisms for variants in these structures with disease phenotypes and how they affect protein expression levels

APAeval   Link to github

Evaluated alternative polyadenylation (APA) computational methods for the detection, quantification of poly(A) sites, and estimation of their differential usage across RNA-seq samples

Modeling cooperative transcription factor binding

Based on ChIP-seq and data from high-throughput assay we designed, analyzed and modeled how pairs of transcription factors (TFs) affect each other's binding to the DNA in close proximity

PUBLICATIONS

*Equal contribution

1. Machine Learning Algorithms to Predict Mortality and Allocate Palliative Care for Older Patients With Hip Fracture

   Michael P. Cary, **Farica Zhuang**, Rachel Lea Draelos, Wei Pan, Sathya Amarasekara, Brian J. Douthit, Yunah Kang, Cathleen S. Colon-Emeric, *Journal of the American Medical Directors Association, 2020,* link

2. A machine learning-based prediction model for variants of uncertain significance found in cate-cholaminergic polymorphic ventricular tachycardiaand long QT syndrome-associated genes

   Rachel L. Draelos MS*, Jordan E. Ezekian MD MPH*, **Farica Zhuang** MS, Zhushan Zhang MD PhD, Perathu Kannu Rakesh Manivannan MBBSc, William Eisner BSc, Ricardo Henao PhD, Andrew P. Landstrom MD PhD, *Circulation: Arrhythmia and Electrophysiology, 2022* link

TEACHING

ESE 546: Principles of Deep Learning	UPenn
Teaching Assistant & Penn Online Course Developer	2022- present
Compsci 101: Introduction to Computer Science	Duke
Teaching Assistant	2019 - 2020
NC School of Science and Mathematics	Durham, NC
Python instructor for high school immersion program	2019 - 2020
Syrian Refugee Center	San Diego, CA
English and Math tutor	2017 - 2018
English Language Institute	UC San Diego
English Conversation Leader & Teaching Assistant	2017 - 2018
Summer Academy	UC San Diego
Math Teaching Assistant	2017
Pass the Torch	Foothill College
English tutor	2015 - 2016

Presentations

Integrative RNA Biology session (iRNA COSI)	ISMB
Long Talk	2022
Integrative RNA Biology session (iRNA COSI)	ISMB
Poster	2022
Variant Interpretation session (VarI COSI)	ISMB
Long Talk	2022
Variant Interpretation session (VarI COSI)	ISMB
Poster	2022
Big Data in Health	UofSC National Big Data Health Science Conference
Talk	2020
Big Data in Health	UofSC National Big Data Health Science Conference
Poster	2020
Regulatory & Systems Genomics	RECOMB/ISCB Conference
Poster	2019

Awards

Outstanding Teaching Assistant Award	2020
Duke University	
HackXX Women's Hackathon Beginner Hackers Champion	2017
UC San Diego	
Honors Scholar	2016
Foothill College	
Outstanding Student Award	2015
Foothill College	

Leadership

ACM-W President Duke University Chapter	2019 - 2020
Indo@Duke Co-Founder and Vice-President	2019 - 2020
Graduate and Professional Student Council Duke University	2019 - 2020

Skills

Computational skills	Python; PyTorch; Java; C++; C; Unix/BASH; R; TensorFlow; machine learning; deep learning; data analysis; bioinformatics
Biology	RNA-seq; ChIP-seq; RNA secondary structure; transcription factor; variants; gene regulation; protein expression; PheWAS; GWAS; GTEx
Languages	English (native); Indonesian (native); Mandarin (fluent); Hokkien (fluent)