

Education

Princeton University

September 2015- May 2019

B.S.E in Computer Science, Certificates in Statistics and Machine Learning, Quantitative and Computational Biology

Relevant Coursework: Algorithms and Data Structures, Programming Systems, Big Data, Contemporary Logic Design, Probability and Stochastic Systems, Reasoning about Computation, Statistics, Linear Algebra, Multivariable Calculus, Quantitative Principles in Cell + Molecular Biology, Social Networks

Skills

Programming Languages

- Java
- Python
- C
- Scala
- Javascript
- Assembly (x86_64)

Web Development

- HTML
- CSS/LESS
- Meteor
- Django
- Flask

Libraries/Frameworks

- Bootstrap
- jQuery
- D3
- Wicket
- Hibernate

Data Science

- R
- SQL
- AWS

Experience

Software Engineer Intern

Summer 2017

Phosphorus

- Currently working on clinic management portal for distributors using Phosphorus's SaaS platform.

Undergraduate Grader

2016 - 2017

Princeton University Department of Computer Science

- Graded and provided feedback for student-submitted programming assignments in Java for 400+ student course.

Summer Research Intern

Summer 2016

Harvard-MIT HST Bioinformatics Program

- Developed web tool for visualizing geographic trends in AETNA insurance and US Census data using R and MySQL.
- Performed analysis on diabetes and BRCA incidence as proof-of-concept of tool – pending publication.
- Contributed to open-source client-side web application for bioinformatics analysis (www.ubit2.com) - pending publication.

Leadership

Co-Director

2017 - present

Organizer

2016 - 2017

HackPrinceton

- Coordinated workshop schedule, category prizes, bus routes and created starter kit for 600-person bi-annual hackathon.

Director emeritus

2017 - present

Cofounder and Director

2016 - 2017

Princeton University Science Olympiad

- Recruited 100+ volunteers, won \$5000 in funding from eleven academic centers, handled logistics for all 23 competition events.
- 600 high school students competed. Article on us at <http://www.dailyprincetonian.com/article/2017/02/inaugural-science-olympiad>

Projects

UBiT2

Open-source client-side web app for visualization and analysis of RNA-seq and qPCR data. Computation done entirely in browser.

Technologies Used: JavaScript (jQuery, D3), HTML5/CSS3 (Bootstrap)

CWAS

Plots choropleth maps of USA at the county, state or regional level from user-inputted data, AETNA claims or US census data

Technologies Used: R (Shiny, choroplethr, ggplot2, rmysql, grid), MySQL

Publications

[3] (Pre-print) Fan, J, **Fan, D**, Slowikowski, Kamil, Gehlenborg, K, Kharchenko, P. (2017). UBiT2: a client-side web-application for gene expression data analysis.

[2] Kopp, Z. A, Hsieh, J, Li, A, Wang, W, Bhatt, D. T, Lee, A, Kim, S. Y, **Fan, D**, ... Park, Y. (2015). Heart-specific Rpd3 downregulation enhances cardiac function and longevity. *Aging*, 7(9), 648-660. doi:10.18632/aging.100806

[1] Lin, S, Wang, X, Kamiya, Y, Chern, G, Fan, F, **Fan, D**, ... Cheong, S. (2014). Topological defects as relics of emergent continuous symmetry and Higgs condensation of disorder in ferroelectrics. *Nature Physics*, 10(12), 970-977. doi:10.1038/nphys3142

Awards Won

Princeton Innovation Magazine 25 Under 25

February 2016

Intel Science Talent Search Semifinalist

January 2015

USA Biology Olympiad Semifinalist

March 2015