David Fan

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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		**Web Development**		**Libraries/Frameworks**		**Data Science**
- Java	- Scala	- HTML	- Django	- Bootstrap	- Wicket	- R
- Python	- Javascript	- CSS/LESS	- Flask	- jQuery	- Hibernate	- SQL
- C	- Assembly (x86_64)	- Meteor		- D3		- 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 chloropleth maps of USA at the county, state or regional level from user-inputted data, AETNA claims or US census data
Technologies Used: R (Shiny, chloroplethr, 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**