David Fan

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Education

Princeton University
September 2015- May 2019

B.S.E in Computer Science, Certificate in Statistics and Machine Learning GPA: 3.7/4.0

Relevant Coursework: Algorithms and Data Structures, Big Data, Functional Programming, Information Security, Programming Systems, Contemporary Logic Design, Probability and Stochastic Systems, Reasoning about Computation, Statistics, Linear Algebra

Experience

Software Engineering Intern
Summer 2017

Phosphorus

- Placed in agile engineering team as one of 30 students in Princeton Startup Immersion Program, selected from 300+ applicants.
- Redesigned management portal and implemented custom UI/UX components in admin dashboard using Wicket and Scala.
- Created distributor preference/permission scoping model in Scala, Spring Boot, Hibernate, and Postgres SQL.
- Helped configure elastic load balancers and auto scaling groups on AWS, and wrote Cloud Formation Templates.

Research Intern
Summer 2016

Harvard-MIT HST Program

- Developed web tool for visualizing geographic trends in AETNA insurance and US Census data using R and MySQL.
- Contributed to open-source client-side web application (http://pklab.med.harvard.edu/jean/ubit2/index.html).

Leadership

Codirector
2017 - current

HackPrinceton (hackprinceton.com)

- Princeton's biannual hackathon hosts over 1,100 students from around the world each year. In 2016, I was an organizer and now, I am the head director for HackPrinceton Fall 2017 and Spring 2018. I manage a team of 30 organizers and a budget of $150,000.

Cofounder and Director
2016 - 2017

Princeton University Science Olympiad (scioly.princeton.edu)

- 800 of the USA's top high school students compete at the annual Princeton University Science Olympiad invitational tournament.
- Led a team of 10 students, 100 volunteers, and founded this campus group from scratch. Coordinated the writing of 23 events.

Projects

Lyff
Enables user to call a Lyft ride with just a phone call. Won **"Best Use of Vonage/Nexmo API Prize" at PennApps Fall 2017**.
Link: github.com/akashlevy/Lyff
Technologies Used: Python, Nexmo API, Google Maps API, Amazon Lex, Amazon Lambda, Lyft API

UBiT2
Open-source client-side web app for visualization and analysis of RNA-seq and qPCR data. Computation done entirely in browser.
Link: http://pklab.med.harvard.edu/jean/ubit2/index.html
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

Skills

Programming Languages
- Java
- C
- Python
- Assembly
- OCaml
- Javascript

Web Development
- HTML
- Django
- CSS
- Flask
- Meteor.js
- Node.js

Data Science
- R
- Machine learning
- SQL
- AWS

Frameworks and Tools
- jQuery
- Hibernate
- D3
- Unix
- Wicket
- Git

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

Princeton Innovation Magazine 25 Under 25 **February 2016**
Intel Science Talent Search Semifinalist **January 2015**