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
Select Courses: Algorithms, Machine Learning, Functional Programming, Probability + Stochastic Systems, Algorithmic Game Theory, Networks, Inform. Security, Programming Systems, Logic Design, Reasoning about Computation, Statistics, Linear Algebra

Work Experience

Amazon Web Services | Software Engineering Intern | East Palo Alto, CA **Summer 2018**
- Developed production cluster service for automated ticket resolution in Aurora – a distributed cloud-native relational database.
- Wrote tool for enabling/disabling autoscaling policies and provisioning IOPS on pre-prod clusters. Used Java, DynamoDB, and internal service APIs.

Phosphorus | Software Engineering Intern | New York, NY **Summer 2017**
- Redesigned management portal and implemented custom UI/UX components in admin dashboard using Wicket and Scala.
- Created distributor preference scoping model in Scala, Spring Boot, Hibernate, and PostgreSQL. Wrote AWS Cloud Formation templates.

Harvard-MIT HST Program | Research Intern | Boston, MA **Summer 2016**
- Developed web app for visualizing geographic trends in AETNA insurance and US Census data using R Shiny and MySQL.
- Contributed to open-source client-side web application for bioinformatic analyses. (see Projects).

Leadership

HackPrinceton | Codirector (hackprinceton.com) **2017 - 2018**
- Princeton's biannual hackathon hosts 1,100 students from around the world each year. Led 30 organizers and raised $130,000 in funding as head director of HackPrinceton Fall 2017 and Spring 2018.

Princeton University Science Olympiad | Cofounder (scioly.princeton.edu) **2016 - 2017**
- 800 of the USA's top high school students compete at the annual Princeton University Science Olympiad invitational tournament.
- Founded organization in 2016 and directed a team of 10 organizers + 100 volunteers. Coordinated 23 competition events.

Selected Projects

TigerTexts **2018**
- Web app that consolidates Princeton student coursebook pricing information from multiple sources and offers third-party seller platform. (Node.js, Express, React, Redux, MongoDB, Scrapy) tigertexts.io/about

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

UBiT2 **2016**
- Open-source client-side web app for visualization and analysis of RNA-seq and qPCR data. Computation done entirely in browser. (JavaScript, HTML5, CSS3) pklab.med.harvard.edu/jean/ubit2

Skills

Languages: Java, Python, R, OCaml, C, Go, JavaScript
Libraries/Frameworks: Shiny, ggplot2, Numpy, Pandas, Bootstrap, jQuery
Web Development: HTML, CSS, Express.js, Flask, MongoDB, MySQL
Additional Tools: Git, AWS, Jupyter, UNIX, LaTeX

Publications

[1] UBiT2: a client-side web-application for gene expression data analysis. *bioRxiv*, 2017.
[2] Heart-specific Rpd3 downregulation enhances cardiac function and longevity. *Aging,* 2015.
[3] Topological defects as relics of emergent continuous symmetry and Higgs condensation of disorder in ferroelectrics. *Nature Physics,* 2014.

Awards

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