David Zeng

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EXPERIENCE

TWO SIGMA | Software Engineering Intern - Trading Engineering
May 2018 – Current | New York, NY
- Built liveness monitoring and anomaly detection system (alerts and dashboard) for live trade execution data in **Scala**. Processed millions of rows of data per day.
- Used historical data to investigate different anomaly detection methods and generate anomaly thresholds. Worked in **Spark** and **pandas**.

ADDEPAR | Software Engineering Intern - Data Engineering
May 2017 – Aug 2017 | Mountain View, CA
- Wrote data ingestion service to parse events from corporate actions feed and match events to securities. Wrote internal **Java** library for building regex to extract data from sentences.
- Updated security master to model data for multiple listings of a single security. Set up DB migration and data re-ingestion to support updates. Worked in **Java** and **MySQL**.

LEANPLUM | Software Engineering Intern
May 2016 – Aug 2016 | San Francisco, CA
- Rewrote user permissions system, adding more granularity and customization. Built new frontend permission management interface using **AngularJS** and **Python**

CMU COMPUTER SCIENCE | Teaching Assistant
Aug 2016 – Dec 2016, Aug 2017 - Present | Pittsburgh, PA
- 15-251 Great Ideas in Theoretical Computer Science (x3), 15-151 Mathematical Foundations for CS
- Lead recitations, taught topics in discrete math and computer science theory.

PROJECTS AND ACTIVITIES

PARALLEL SHORTEST PATHS | Github | Paper
- Implemented and optimized Δ-stepping, a parallel shortest paths algorithm, using **C++** and **OpenMP**.
- Achieved up to **7.76x** speedup (on 16 threads) over optimized sequential algorithm when testing on real world network graphs.

FAIR DIVISION RESEARCH | Poster | Paper
- Worked on designing algorithms for fair division of indivisible items in an online setting.
- Utilized **CVXPY** (convex optimization solver) for counter-example search.

CARNEGIE MELLON SOLAR RACING | Optimization Team Lead
Sep 2015 - Present | CMSR
- Designed a new system of sensors to monitor power and propulsion system of a 18 ft long racing boat.
- Integrated with Android application that formats and displays data to driver.

EDUCATION

CARNEGIE MELLON UNIVERSITY | BS in Computer Science, Minor in Machine Learning
Expected May 2019 | Pittsburgh, PA
Dean's List (All Semesters) • GPA: 3.97 / 4.00

AWARDS
CMU Quantathon First Place (2017, 2018)
TartanHacks Student Impact Prize (2017)
Putnam Top 500 (2015, 2016, 2017)
ACM ICPC Regionals Top 10 (2015, 2016, 2017)
USA Computing Olympiad Finalist (2014)

RELEVANT COURSEWORK
(10703) Deep Reinforcement Learning (Graduate)
(10701) Introduction to Machine Learning (Graduate)
(15418) Parallel Computer Architecture and Programming
(21270) Introduction to Mathematical Finance
(15359) Probability and Computing
(15312) Principles of Programming Languages