

# Edward Cen

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## Education

### University of California, Berkeley

Berkeley, California

B.S.E IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

May 2021

- Relevant Coursework: Data Structures and Algorithms, Linear Algebra, Data Science, Discrete Math and Probability
- GPA: 4.0, Eta Kappa Nu Honor Society

### Bellaire High School

Houston, Texas

HIGH HONORS MAGNET DIPLOMA

May 2017

- Valedictorian – Rank 1 out of 765 students, SAT: 2370, GPA: 4.0, National Merit Scholar, Congressional Award Gold Medal

## Technical Experience

### Two Sigma Investments

Houston TX

SOFTWARE ENGINEERING INTERN

May 2018 - Aug. 2018

- Built Bayesian optimization-based service to automatically optimize runtime of Spark pipelines with up to 30% improvement
- Created unsupervised learning model for geospatial datasets which increased persistence of spatial clustering to over 99.9%
- Worked extensively with noisy log-normal data and wrote internal tools to monitor and remove noise

### Nommery

Berkeley, CA

DATA ANALYTICS INTERN

Sep. 2017 - Dec. 2017

- Segmented Nommery's users by motivations and interests and discovered meaningful correlations using Pandas and Jupyter Notebook
- Summarized research and generated data visualizations using Seaborn about user base clusters for marketing

## Projects

### Halite II AI Challenge

- Designed heuristic-based resource allocation algorithms to ensure a distribution of ships which minimized threats and maximized mining potential
- Implemented efficient algorithm for multi-agent pathfinding to avoid collisions which reduced pathfinding runtime by over 50%
- Top 5% of all competitors, 1st Place Winner at Berkeley Halite Hackathon

### Fortnight Game

- Generated random game maps using minimum spanning tree to ensure connectivity which reduced setup time by 70% over naive methods
- Designed "zombie" AI which cooperatively communicated to trap the player using minimax algorithm
- Implemented backpack and shooting game mechanics with custom graphics

### Video Chat Service

- Front-end in pure JS and back-end in Express.js with websockets for host matching and webRTC for P2P video and audio streaming
- Deployed on AWS Elastic Beanstalk with ACM SSL certificate for secure websockets

### Food Atlas Data Analysis

- Visualized demographics, food access, and income data of over 3000 counties with obesity rate using python libraries to quickly discover key factors
- Developed linear regression model for obesity which outperformed default methods by 10% and quantified the weight and direction of factors

## Leadership Experience

### Data Science Society at Berkeley

Berkeley, CA

ANALYTICS COMMITTEE MEMBER

Sep. 2017 - Present

- Helped teach and promote knowledge of data science through workshops on common industry technologies such as Git, SQL
- Participated in data science projects for company consulting such as Nommery

## Honors & Awards

**Dean's Honors List**, Top 10% semester and overall GPA for College of Engineering undergraduates

Dec. 2017, May 2018

**Edward Frank Kraft Award**, Perfect GPA for first-semester freshmen

Jan. 2018

**US Physics Team**, Gold Medal on US Physics Olympiad

Jun. 2017

**High Honors**, Top 50 on US National Chemistry Olympiad

May 2016

## Skills & Interests

**Languages-** Python (Proficient), Java (Proficient), C++ (Familiar), SQL (Familiar), JavaScript (Familiar), HTML5/CSS3 (Familiar)

**Tools & Packages-** Bash, LaTeX, Git, AWS, Spark, Hadoop, Jupyter Notebook, NumPy, Pandas, Scikit-Learn, React.js, Node.js & Express.js

**Professional Interests** Data Science, Machine Learning, Scientific Programming, Distributed Computing, Portfolio Optimization