

# Rajvardhan Oak

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## EDUCATION

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### University of California, Berkeley

Masters of Information Management Systems

· Courses: *Cyber Security, Data Science, Web Technology, Product Management*

*Aug 2018-May 2020*

### University of Pune

Bachelors of Engineering (Computer Engineering)

· Coursework: *Data Mining, Database Management, Cyber Security, Networks*

*Jul 2014 - Jun 2018*

*Overall GPA: 3.92/4*

## SKILLS

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- **Programming Languages:** *Python, R, Java, C, C++*
- **Machine Learning:** *TensorFlow, Keras, Scikit-Learn, SQL, MongoDB, Tableau*
- **Web Technologies:** *Javascript, ReactJS, Angular4, Django, Flask, HTML*

## EXPERIENCE

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### CAHL Lab (UC Berkeley)

*Teaching Assitant | Research & Development Assistant*

- Teaching Assistant for the courses Machine Learning in Education and Fundamentals of Data Engineering.
- Work includes mentoring students in NumPy, Pandas, Keras, Matplotlib, SQL, TensorFlow.
- Working with edX and MIT to develop an analytics page for predicting learner trends using ML algorithms.
- Responsible for data preprocessing, pipelining and implementing RNN, SVM and Bayesian classifier.

*Aug 2018-Present*

### EECS Department (UC Berkeley)

*Graduate Researcher | Advisor: Prof. Dawn Song*

- Worked on a secure blockchain-based system for federated machine learning.
- Implementation of various use cases (fraud detection, malware analysis) in deep federated learning.
- Implemented algorithms for free rider detection to identify free riders in collaborative machine learning.

*Oct 2018-Present*

### BMC Software

*Software Development Intern*

- Designed and developed a tool for dynamic UI generation for internal BMC Infrastructure.
- Worked with Angular 5, JavaScript, NodeJS, CSS and MongoDB.

*Jun 2017-Jun 2018*

## PROJECTS

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### SmartCommute

- Designed and implemented RL algorithm (Q-Table, DQN) to minimize traffic congestion.
- Achieved a theoretical saving of over 7 hours / week by reducing wait time due to congestion.
- Winner at DeepHack Silicon Valley 2018 on *Hack the Bay Area Traffic*.

### Scollab

- Blockchain based solution to facilitate secure multiparty collaborative development.
- Used multi-party signatures with Ethereum and Solidity to build smart contracts.

### BitOpinion

- Use of word embeddings and neural nets to classify tweets related to Bitcoin.
- Evaluation of neural nets, bayesian classifiers, SVM and decision trees for sentiment analysis.

### DDoS Detection

- Application of Machine Learning to detect DDoS Attacks in medium-scale networks.
- Developed an ensemble model with Decision trees and Bayesian classifiers.

## PUBLICATIONS

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- Rajvardhan Oak, Karanveer Singh Jhala, Mrunmayee Khare, “*Smart Collaboration Mechanism using Blockchain Technology*”, The 5th IEEE International Conference on Cyber Security and Cloud Computing (IEEE CSCloud 2018) (<https://ieeexplore.ieee.org/document/8421862/>)