# Jonathan Ngan

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## Work Experience

### Amazon - AWS (Amazon Web Services)
Seattle, WA

SDE INTERN — *May 2017 - Aug. 2017*

- Re-implemented an essential customer-facing functionality to improve scalability and performance by redesigning the base algorithm, improving data structure choices, and introducing parallelism
- Decreased runtime of general use case by 99.06% and that of the large-scale use case by 99.19%
- Increased maximum S3 partition column count for customers by more than 100x
- Incorporated robust failure mode handling for memory and dependency issues

### Novartis - CADD (Computer Aided Drug Design)
Emeryville, CA

ML/SOFTWARE INTERN — *June 2016 - Sep. 2016*

- Implemented machine learning algorithms from various papers to identify compounds of interest
- Exponentially decreased times in internal software through parallelization and vectorization
- Repaired in-house packages for cross-OS functionality during company-wide OS update

## Other

### UC Berkeley Department of Statistics
Berkeley, CA

UNDERGRADUATE DIRECTED STUDY — *Jan. 2017 - May 2017*

- Application of Latent Dirichlet Allocation model in extracting information from Yelp reviews
- Explored n-gram approaches and RNN optimizations
- Generated statistically founded strategies for businesses to increase ratings

### Blockchain@Berkeley
Berkeley, CA

DEVELOPER PROJECT LEAD — *Jan. 2017 - May 2017*

- Designed and implemented a cryptocurrency-based arbitrage application
- Tracked exchange centers worldwide for complete spread generation
- Combined efficient algorithms with a clean front end to create a marketable product

### UC Berkeley Department of Computer Science
Berkeley, CA

LAB ASSISTANT — *Jan. 2016 - May 2016*

- Taught and explained key concepts in data structures to students enrolled in CS 61B
- Effectively communicated with students to recognize and debug logical errors in projects and labs

## Recent Projects

### Neural Network

CREATING A NEURAL NETWORK FROM SCRATCH (NO MACHINE LEARNING LIBRARIES) — *April 2017*

- Created a basic 3-layer neural network that utilized mini-batching and quick propagation to speed up training
- Surpassed staff solution accuracy with 88% testing accuracy after 1 minute of training on custom handwriting dataset

### Car Vision - Traffic App

CHECK AREAS FOR TRAFFIC, EMERGENCIES, AND HEAVY POLICE MONITERING — *Nov. 2016 - Jan. 2017*

- Used modified Haar cascades for efficient vehicle detection
- Applied various background subtraction algorithms to account for effects like variable lighting

## Education

### University of California, Berkeley
Berkeley, CA

BACHERLOR'S IN COMPUTER SCIENCE, MINOR IN CHEMICAL ENGINEERING - GPA: 3.7 — *Aug. 2014 - May 2018*

- Coursework: Data Structures, Algorithms, Computing with Data, Computer Architecture, Artificial Intelligence, Machine Learning, Operating Systems and Systems Programming, Internet Architecture and Networks (in progress), Robotics (in progress)

## Skills

**Fluent languages:** Java, C, Python

**Proficient languages:** C#, R, Matlab, Javascript

**Tools/Technologies:** Hadoop, Hive, Spark, Git, REST, Junit/Mockito, Jenkins, Visual Studio, SQL