

# Nithin Raghavan

(678) 200-5839 — rnithin@berkeley.edu — rnithin1 (Github) — linkedin.com/in/nithinraghavan

## EDUCATION

### University of California, Berkeley (Class of 2020)

*Aug 2017 – present*

Computer Science *Bachelor of Arts*, Applied Mathematics *Bachelor of Arts*

(GPA: 3.59)

- CS61B: Data Structures
- CS170: Efficient Algorithms
- EE127: Optimization Models and Applications
- Math 128a: Numerical Analysis
- Math 126: Partial Differential Equations
- CS189: Introduction to Machine Learning

### Georgia Institute of Technology

*Aug 2015 – May 2017*

Courses Taken while in High School

- Applied Combinatorics
- Number Theory and Cryptography

## EXPERIENCE

### Mobile Sensing Lab, UC Berkeley

*Oct 2018 – Present*

- Currently writing code implementing a parallelized Frank-Wolfe algorithm for dynamic traffic assignment in C++/CUDA using contraction hierarchies
- Helping research the impact of different optimization models of routing behaviour on the Waze problem

### RISE Lab, UC Berkeley

*Jun 2018 – Dec 2018*

- Designed and implemented a data visualization tool for Jupyter Notebook for hyperparameter optimization for Cirrus, a serverless machine learning framework
- Helped write code involving AWS Lambdas for model primitives such as logistic regression

### IBM Almaden Research Center, Machine Learning Laboratory

*Jul 2017 – Aug 2017*

- Trained an artificial neural network with visual question answering abilities on Stanford's CLEVR dataset with 70% overall accuracy
- Implemented sequence autoencoders, CNNs and LSTMs with Tensorflow and Keras

## PROJECTS

### Resource-Provisioning GPU Server

*Dec 2017 – present*

- Developed a Python-based shell to automate on-demand request processing and resource provisioning in a GPU + CPU cluster
- Collaborated on a team to create a program that utilizes Slurm for cluster management and deploys tasks in Docker containers

### TaxiFindMe

*Apr 2018*

- Routing web app that helps New Yorkers find the best spot to minimize taxi waiting time, taking into account travel time and time of day
- Preprocessed 20 million entry taxi dataset with k-means machine learning algorithm; for querying, KNN is run from an input location to find nearest cluster. Frontend employs Django
- Reduced query time up to 94% from the naive implementation

### ShirtMapper

*Jan 2018*

- App that resizes images of custom shirts and maps them onto people
- Utilizes OpenCV and Scipy, and uses Haar classifiers for edge detection; frontend employs React Native

## SKILLS

### Awards: Exploravision National Contest

*2016*

- Wrote a paper proposing blockchain's potential link to autonomous vehicles, and won honorable mention.

**Models/Algorithms:** Regression/classification (ridge, logistic, SVM, decision trees, OLS), PCA/SVD, ensemble learning, k-means, deep learning (CNNs, LSTMs), Frank-Wolfe

**Frameworks/Softwares:** Numpy, Scipy, Sk-learn, Pytorch, OpenCV, Docker, Slurm, d3js, CUDA

**Programming Languages:** Python, Java, C, C++, C#, Bash, Latex, SQL, JavaScript, Matlab

**Operating Systems:** Unix-like systems (Linux, FreeBSD, Mac OS X), Windows

**Certifications:** Android Development (University of Maryland through Coursera)