

# Akash Alok Mahajan

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## SUMMARY

Curious & enjoy wearing different hats. Applied Statistics - 3 yrs incl. work ex., courses/projects, TAs.

- Teaching Assistant (TA) at Stanford for Machine Learning (CS229) and Deep Learning (CS230)
  - Built a custom deep learning model on radio signals, being evaluated for deployment at [SETI](#) (Ongoing)
  - Built an ECG annotation model comparable to inter-expert deviation on a public dataset 2016
  - Initial data science team member at Tiger Global-funded smart vehicle startup in Bangalore 2015-16
- Interested in learning to deploy ML/data products with related full-time roles. Graduating in June 2018.

**Languages :** Python, R, Scala, C, SQL, MATLAB

**Libraries & Tools :** Keras, Torch7, Apache Hadoop, Spark, AWS EMR/S3, Shiny, Processing

## EDUCATION

### Stanford University, Management Science & Engineering

Stanford, CA

MS, Data Science track **GPA : 3.65**

Sep 2016-June 2018

**Courses :** Small Data (MS&E226), Machine Learning, AI (CS229, 221)

Databases, Data Mining, Algorithm Design (CS145, 246, 161\*), Intro. to Computer Systems (CS107)

**Teaching Assistant :** CS229 Machine Learning, CS230 Deep Learning\* (**co-taught by Andrew Ng**)  
(\*Winter 2018)

### Indian Institute of Technology, Madras

Chennai, India

B.Tech., Chemical & Control Systems Engineering **GPA : 8.78/10**

July 2011-July 2015

**Courses/Projects :** Modern Control Theory, Time Series Analysis, Kalman Filters

## PROJECTS

### Classification of ATA Radio Signals with SETI Institute+IBM Watson (CS341 Project) Stanford, CA

*Identifying signal types from poor SNR data, Advisor : Prof. Jeffrey Ullman [\[report\]](#)* Mar-June 2017

- Built an ensemble model on spectrograms : custom 12-layer CNN architecture, dynamic-programming based feature extractor. (Python/Keras)
- Model under evaluation to be deployed at SETI (6-class Accuracy 80%, 2-class F1 96%)

### AI-based Music Generation (CS221 Project)

Stanford, CA

*Building generative models from MIDI data for conditional generation of melodies*

Ongoing

- Exploring the use of Markov chains, RNN based sequence models, and potentially Variational Autoencoders such as from Google Magenta for melody generation from MIDI files (Python/Tensorflow)

### Building a Dynamic Memory Allocator (CS107 Project)

Stanford, CA

*Implementing malloc, realloc and free from scratch in C*

Mar-June 2017

- Implemented a segregated explicit free list, exceeding benchmark utilization and throughput targets

## EXPERIENCE

### Ather Energy, Data Scientist

Bangalore, India

*Building intelligence on smart electric scooters, part of the initial team of 2*

Jul 2015-Jun 2016

Worked on initial feature roadmap with different internal teams, was presented at the product unveiling.

Led 3 feature prototypes, contributed to infrastructure, and visualisation projects including :

- Systems to detect drivetrain damage, locate speed bumps, and profile riding styles from sensor data
- Infrastructure - CAN data parsers, initial Postgres schema, internal R/Shiny libraries
- Riding style visualization projects used to engage the early-adopter community [\[link\]](#)

## INTERNSHIPS

### Salesforce - Coolan (acquired in 2016), Data Science Intern

San Francisco, CA

*Datacenter hardware monitoring : Assisting Hadoop data-pipeline migration*

Jun-Sep 2017

- Built a data cataloguing tool for time-series backups in Amazon S3, and setup a pilot Spark+S3 cluster on Amazon Elastic Mapreduce (EMR). Learnt Scala, Spark and Hadoop tools over the summer.
- Built a pilot Spark ETL job to structure compressed JSON backups on S3, currently in use for migration.

### Predible Health, Deep Learning Engineer Intern

Bangalore, India

*PoC for automated QT interval annotation of heart ECG waveforms using CNNs*

Jun-July 2016

- Built a custom 1-D convolution based CNN architecture on MIT-Physionet dataset
- Performance comparable to human inter-expert deviation on dataset (Mean +/- SD : 18 +/- 19.6ms)