Aditya Chindhade

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Education:

- **Carnegie Mellon University (Pittsburgh, PA)** GPA: 3.62 / 4 **Dec 2018**
  - Master of Science in Chemical Engineering **(Specialization**: Machine Learning and Optimization**)**
- **Birla Institute of Technology and Science (BITS-Pilani)** GPA: 3.87 / 4 **May 2017**
  - Bachelor of Engineering (Honors) Chemical Engineering

Skills:

- **Programming Languages:** **Expert**: Java, Python, FORTRAN, MATLAB **| Proficient**: R, C, XML, HTML
- **Packages:** Pandas, Apache Spark, Keras, TensorFlow, OpenMP, MPI, OpenAcc
- **Software:** Android Studio, Eclipse, MiniTab, GAMS, ALAMO, Git

Experience:

Carnegie Mellon University - *Research Assistant (Machine Learning)* **Jan 2018 – Present**

- Working with Prof. Nick Sahinidis in a team of six graduate students on Automated Machine Learning (ALAMO).
- Benchmarked the performance of the ALAMO approach with Group Lasso, LARS and non-negative garrote using the Mallow's Cp and achieved a better performance compared to traditional techniques.

Massachusetts Institute of Technology (MIT) –Harvard (HST) Division - *Research Intern* **May-Aug 2016**

- Extracted, visualized and performed statistical analysis on spectroscopy data using Origin and Excel to build predictive models for anti-cancer drug delivery.
- Performed full-factorial analysis-of-variance (ANOVA) using MiniTab™ to compare the effect of different features.

Publications:

- Chindhade, A., Alshi, A., Bhatia, A., Dabhadkar, K., & Menon, P. S. (**2018**). A machine learning model for identifying cyclic alternating patterns in the sleeping brain. *arXiv preprint arXiv:1804.08750.*

Android/Java experience:

- Built '**Whack-a-mole**' game on Java using parallel threading and deployed Windows executable. **March 2018**
- **Android Applications**: **May 2017**
  - Worked in a team of two to develop Pedometer and Calculator android apps on Android SDK-24
  - Implemented the back-end using Java and front-end using XML on Android-studio with Gradle.

Research Projects:

- **Turning thoughts to actions (CMU - Neuroscience):** **May 2018**
  - Worked with Prof. Eric Yttri (Neuroscientist) on mapping neuron firing frequency to physical activity.
  - Implemented a Neural Network using Keras to model neuron activation and achieved test accuracy of 92%
- **Machine learning for identifying patterns in the sleeping brain (CMU – Hackathon/ Philips):** **April 2018**
  - Identified cyclic patterns in the human sleeping brain using EEG data by applying logistic regression
- **Optical Character Recognition (OCR) (CMU - Machine Learning):** **March 2018**
  - Implemented a neural network from scratch to identify handwritten alphabets and digits.
- **Mini Siri (CMU - Machine Learning):** **Feb 2018**
  - Developed a text-analysis-based assistant for providing flight information based on a natural sentence input.
  - Compared multiple word grouping to analyze training and testing accuracy (Test accuracy = 90 %).
- **Machine Learning for Image compression (CMU):** **Dec 2017**
  - Implemented K-means clustering algorithm to compress a standard RGB image by a factor of 6.
  - Applied Principal Component Analysis (PCA) to reduce image dimensionality followed by reconstruction.
- **Comparison of first order optimization methods for Deep Learning (CMU):** **Nov 2017**
  - Used Keras and TensorFlow for comparing first order gradient-based methods for deep learning on MNIST.
  - Compared training and test accuracy with literature to find a close match with literature.

Relevant Coursework:

CMU: Java for Application programmers (08-671) | Data structures for Application programmers (08-722) | Computer Science in Chemical Engineering | Computational methods (Optimization) | Mathematical methods for engineering
Audit: Machine Learning (10-601), Computer Systems (15-513/ 18-600)
Online: Introduction to Machine Learning (Stanford-Coursera), Data Science (CS-109 Harvard University)

Hackathons:

- Won **first prize** in HackAuton 2018, organized by Auton Lab, Robotics Institute at CMU and Philips.
- Led a team of 5 graduate students in the Neuro-Hackathon, organized by BrainHub, CMU and supported by Google.