KEDAR DABHADKAR

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EDUCATION

Carnegie Mellon University | GPA: 3.74/4.0 — **Pittsburgh, PA**
Master of Science in Chemical Engineering — **Dec 2018**
(Specialization: **Data Analytics, Machine Learning**)

Relevant Coursework:
Process Systems Modeling (06-665), Introduction to Machine Learning (10-601), Computer Science in Chemical Engineering (06-611), Applied Data Science (16-791), Introduction to Deep Learning (11-785).

Institute of Chemical Technology — **Mumbai, India**
Bachelor of Chemical Engineering — **May 2017**

SKILLS

Programming Languages: *Proficient*: Python, R, SQL; *Intermediate*: JAVA; *Basic*: Bash, FORTRAN, C++, HTML.
Software: Apache Hive, Power BI, Tableau, MATLAB, GAMS.
Databases: PostgreSQL, MySQL, MSSQL.
Packages: Pandas, TensorFlow, PyTorch, Keras, scikit-learn.
Cloud Platform: AWS EC2.

EXPERIENCE

Carnegie Mellon University and Air Liquide S.A. — **Pittsburgh, PA**
Graduate Researcher, Master's thesis, advised by Prof. Nikolaos Sahinidis. — **Dec 2017-Dec 2018**

- Collaborated with Air Liquide S.A. to develop statistical methods to model performance of industrial reactors.
- Quantified business and process needs, collected, cleaned and stored all the relevant data in a DBMS.
- Modeled process data using ARIMA with exogenous parameters (ARIMAX) and NARX time-delayed neural networks.
- Assisted transition to data-driven methods from traditional methods by laying down the framework and data pipeline.
- Presented at **'Big Data and Process Engineering: Opportunities and Limits', Paris**, France.

PROJECTS

Analysis of Medical Records Using Natural Language Processing | Python — **Pittsburgh, PA**
Third Prize, Hackathon, North American Association of Central Cancer Registries (NAACCR) — **June 2018**

- Analyzed Electronic Medical Records (EMRs) of 10,000 cancer patients to classify according to cancer site.
- Scored an average F1 score of 0.91 on held-out data with an ensemble of Naïve Bayes, Random Forests and SVM.
- Presented the applicability of such a system in practice to a group of physicians by demonstrating a web application.

Pattern Recognition in Electroencephalogram (EEG) of the Brain | Python | MATLAB — **Pittsburgh, PA**
First Prize, Hackathon, Auton Lab, Carnegie Mellon University and Phillips — **March 2018**

- Cleaned, pre-processed noisy EEG data to induce stationarity and transformed into a sequential window matrix.
- Detected the occurrence of Cyclic Alternating Pattern (CAP) with an accuracy of 58% using logistic regression.
- Published the methodology and results in an academic paper (https://arxiv.org/abs/1804.08750).

Time Series Analysis of Currency Valuation | Python — **Fall 2017**

- Analyzed time-series data using descriptive statistics, various smoothing and stationarity induction methods, and auto-correlations to analyze valuation of the Indian National Rupee against the US Dollar.
- Employed web-scraping to perform live one-day-ahead predictions and multi-step predictions.
- Achieved a mean squared loss of 0.05 with ARIMA and improved it to 0.03 using an LSTM Recurrent Neural Network.

Named Entity Recognition | Python | AWS — **Spring 2018**

- Built feature engineered logistic regression models to extract information from 50,000 sentences.
- Deployed the program on an AWS EC2 p2.xlarge instance to handle heavy computations.
- Improved the average F1-score from 0.60 to 0.75 by feature modification using the time-delay technique.

Speaker Verification | Python | PyTorch | AWS — **Fall 2018**

- Trained a Convolutional Neural Network (CNN) for speaker identification on 125 GB speech corpus.
- Extracted embedding from the penultimate fully connected layer and compared speakers based on cosine similarity.
- Achieved EER (Equal Error Rate) of 13.7 % on the held-out data.

AWARDS AND LEADERSHIP

Third Prize, Cancer Informatics Hackathon, NAACCR 2018 Annual Conference — **June 2018**
First Prize, Hackathon, Carnegie Mellon University and Phillips — **April 2018**
Narotam Sekhsaria Foundation Postgraduate Scholarship — **June 2017**
Treasurer, General Student Body, Institute of Chemical Technology — **July 2015-July 2016**
Event coordinator, ICT Marathon — **Dec 2015**