KEDAR DABHADKAR

dkedar@cmu.edu +1 (734) 819-0242 linked.com/in/dkedar7 Portfolio: dkedar7.github.io

EDUCATION

Carnegie Mellon University | GPA: 3.65/4.0 — **Pittsburgh, PA**
Master of Science in Chemical Engineering — **Dec 2018 (expected)**
(Specialization: **Data-driven Decision-making**)

Relevant Coursework:
Introduction to Machine Learning (10-601), Computer Science in Chemical Engineering (06-611), Process Systems Modeling (06-665), Computational Methods (06-606), Data Science (CS-109) (MOOC).

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: MATLAB, GAMS, ALAMO **Databases:** PostgreSQL, MySQL, MSSQL, Oracle, MongoDB
Packages: Pandas, TensorFlow, PyTorch, scikit-learn

EXPERIENCE

Data-driven Prediction of Catalyst Deactivation (ongoing) |Python|R|MATLAB|ALAMO — **Pittsburgh, PA**
Master's Research, Carnegie Mellon University in collaboration with Air Liquide, Germany — **Jan 2018-present**

- Documented literature to model industrial reactors as hybrids of data-driven methods and first-principles.
- Performed cleaning, preprocessing and exploratory analysis of industrial operation data to find correlations, outlier analysis, feature selection, extraction.
- Implementing response variable-constrained autoregressive neural networks with exogenous inputs to model data.

PROJECTS

Analysis of Medical Records of Cancer Patients 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 them according to cancer type.
- Got an average F1 score of 0.91 on held-out data with an ensemble of Naïve Bayes, Random Forests and SVM.

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

- Cleaned, pre-processed noisy EEG data into stationary values and transformed into a sequential window matrix.
- Predicted the occurrence of Cyclic Alternating Pattern (CAP) with an accuracy of 58%.

Time Series Analysis of Currency Valuation |Python — **Spring 2018**

- Implemented descriptive statistics, various smoothing and stationarity induction methods, auto-correlations to study valuation of the Indian National Rupee against the US Dollar.
- Employed web-scraping to perform live one-day-ahead predictions with ARIMA (MSE=0.05) and LSTM (MSE=0.03).

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

- Built logistic regression models to extract information from about 50,000 sentences with subsequent feature modifications.
- Deployed an AWS EC2 compute cluster to handle the heavy computations.

Reinforcement Learning to Solve a Maze |Python — **Spring 2018**

- Trained an agent to travel from one end of a maze to the destination cell using Q-learning and value iteration.
- Modified the Q-learning algorithm sequentially to access the influence of exploration versus exploitation.

Part of Speech Tagging |Python — **Spring 2018**

- Trained a Hidden Markov Model (HMM) using the forward-backward algorithm to tag all words with their respective parts of speech from 3500 sentences.
- Got a negative log likelihood of 97 on the held-out data.

AWARDS AND LEADERSHIP

NS Foundation Postgraduate Scholarship — **June 2017**
Treasurer-TA, Student body, Institute of Chemical Technology — **July 2015- July 2016**
Best Technical Presentation, Indian Institute of Chemical Engineers — **Feb 2016**
Event coordinator, ICT Marathon — **Dec 2015**