

Aditi Tripathi

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EDUCATION

CARNEGIE MELLON UNIVERSITY

MASTERS IN
ELECTRICAL AND COMPUTER
ENGINEERING
Dec 2020 | Pittsburgh, PA

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY

BACHELORS IN
ELECTRICAL ENGINEERING
May 2016 | Bhopal, India

SKILLS

PROGRAMMING

- Java
- Python
- C
- SQL
- Scala

TOOLS

TensorFlow • PyTorch
OpenMP • Terraform • Spark
OpenCV • Tesseract • ArcGIS
React • MongoDB
Git • Bash/Zsh • Linux

COURSEWORK

GRADUATE

15319: Cloud Computing
11785: Deep Learning
10601: Machine Learning
18793: Image and Video Processing
18613: Foundations of Comp. Systems
15640: Distributed Systems
18645: How to write Fast-code
17681: Data Structures and Algorithms
18845: Internet Services

OTHERS

Data Analytics (Coursera)
Mining Massive Datasets (Stanford)
Blockchain Use Case (CMU)
Udacity Deep Learning Nanodegree

PROJECTS

CARNEGIE MELLON UNIVERSITY

Aug 2019 – Dec 2020 | Pittsburgh, PA

- **Multimodal Visual Question Answering System** A question answering system using multistage fusion for user's photo albums and photo metadata to enable multiple-choice question-answering and providing grounding photos based on the user's question.
- **MyTorch** Developed a variation of PyTorch Library with computational graph functionality for automatic differentiation, MLP, 1D/2D CNN, and RNN networks with activation functions and ADAM/SGD optimizers.
- **Listen-Attend-Spell** Implemented a speech-to-transcript generation model using a combination of 1D CNN and pyramidal BiLSTMs; character level LSTM-decoder with Attention and LockedDropout, to achieve a Levenshtein Distance of 17.7 on Librivox dataset and top 11% on Kaggle Leaderboard.
- **Implemented Q-Learning algorithm** for the mountain-car environment with linear approximations and epsilon-greedy strategy for action selection.
- **Optimized 2D convolution** Optimized a naive implementation of 2D Image convolution in C using SIMD and OpenMP parallel regions.
- **NYC Cab Fare prediction App** Deployed and evaluated an end-to-end ML Flask App using a pipeline of cloud ML APIs and a trained XGBoost model on Google App Engine, with an interface to accept speech queries from users and respond with an audio result. Performed hyperparameter tuning with Bayesian Optimization to improve the accuracy of the predictor.
- **Social Networking Website with Heterogeneous Backends** Built a social network website that displays a user's timeline and top users activity by retrieving data from different back-end systems like MySQL, Neo4j and MongoDB with a light weight, in-memory cache for the frontend.

EXPERIENCE

DATA SCIENTIST INTERN (REMOTE) | BOEING

June 2020 - August 2020 | Bellevue, WA

- Optimized image-stitching code pipeline using OCR to be x4 faster.
- Developed 2D-drawing part segmentation code pipeline to use as an input in part-price prediction using Hierarchical Density-Based Spatial Clustering with Noise.
- Experimented with Convolutional Neural Networks for part similarity search using deep metric learning.

GRADUATE RESEARCH ASSISTANT | STERN RESEARCH

Oct 2019 - Dec 2019 | Pittsburgh, PA

- Created LIDAR data management pipeline (massive point cloud dataset); from spatial database population in PostgreSQL to displaying raster in a 3D local scene using GIS (as a part of Allegheny General Hospital's Aerial Noise Modelling Project).

RESEARCH CONSULTANT | WORLDQUANT | PART-TIME

Dec 2018 – Jul 2019 | Remote, India

- Developed new alpha strategies using online machine learning methods for real time market sentiment data.

CI DESIGN ENGINEER | L&T-MITSUBISHI HITACHI POWER SYSTEMS

Jul 2016 – Nov 2018 | Chennai, India

- Developed control system logics for the coal-flow and vibration monitoring assembly based on various sensor inputs from furnace flame detector's vision system.
- Experimented with a neural network based wall temperature prediction model given fluid pressure, fluid temperature and heat flux with prediction accuracy of 92% for the experimental data.