Aditya Deepak Bhat

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Education

Master of Science in Computer Science — Dec 2023 (Expected)
Arizona State University, Arizona, US. — *GPA: 4.00/4.00*
Courses: Cloud Computing, Semantic Web Mining, Data Intensive Systems for Machine Learning.

Bachelor of Technology in Computer Science and Engineering — Aug 2019
PES University, Bangalore, India - Specialization in Data Science. — *GPA: 8.8/10*

Skills Summary

Programming: Python, Javascript, C/C++
Full Stack: ReactJS, NodeJS, Express, Flask, MongoDB, PostgreSQL, MySQL
DS/ML: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, Keras, TensorFlow, PyTorch, spaCy, OpenCV
Other: Git, AWS (EC2, S3, SQS, Lambda, API Gateway, DynamoDB), Docker, pytest
Certifications: DeepLearning.AI TensorFlow Developer, Deep Learning Specialization by deeplearning.ai on Coursera.

Experience

Software Engineer - Hewlett Packard Enterprise (Bangalore, India) — July 2019 - Dec 2021

- Designed an end-to-end web application using **MongoDB, Express, ReactJS, and NodeJS** to assist in triage and reporting which reduced the manual effort of the triage team by 50%.
- Implemented boot characterization, memory profiling and visualization scripts for Aruba switches using **Python, Flask**, and **ReactJS**, which resulted in early detection of critical regression issues in the switch builds.
- Improved the resource utilization of 8000+ networking devices in the lab by 20% by developing a reservation tool with features like remote auth (LDAP) and network auto-discovery (**Python, JavaScript, MERN, MongoDB**).

R&D Intern - Hewlett Packard Enterprise (Bangalore, India) — Jan 2019 - July 2019

- Decreased the ARP scale characterization test time by 90% by creating a data analysis library using **numpy, pandas, and matplotlib** to help track and visualize arp learning rates at various scales based on data from automated scripts.

Research Intern - Center for Cloud Computing and Big Data (PESU, India) — Sept 2017 - Jan 2019

- Involved end-to-end i.e., literature survey, data collection, analysis, feature engineering, modeling and deployment for *Kannada Kali* - a Cloud based Speech Recognition mobile application for the language Kannada.
- Trained machine/deep learning models in **scikit-learn, TensorFlow** using acoustic features like MFCCs and spectrograms to rate word pronunciation and achieved an F1-Score of $\approx$ 95%.

Machine Learning Intern - Pattern Effects Labs (Bangalore, India) — May 2018 - Aug 2018

- Identified and visualized the most important indicators for stock direction prediction by conducting experiments on tree based models (Decision Trees, Random Forest, XGBoost) using technical indicators on the NIFTY Stock Index.
- Constructed an objective function with certain constraints on buy/sell actions and created an ensemble of learners which led to $\approx$ 50% reduction of trading costs while achieving a micro-average F1-Score of $\approx$ 65%.
- Identified the optimal train/inference window size, and hyper-parameters for each model by performing training, hyper-parameter tuning, and back-testing on historical data (**scikit-learn, Keras, and TensorFlow**).

Projects

Real-Time Face Recognition on edge devices (Raspberry Pi) — Link

- Developed a distributed application that utilizes AWS services (**API Gateway, Lambda, S3, DynamoDB**) to perform real-time face recognition using a containerized Inception Resnet V1 model on videos recorded by IoT edge devices.

AWS Face Recognition as a Service (IaaS)

- Designed a face recognition REST Service based on a deep learning model (CNN), **AWS IaaS (S3, SQS, EC2)** and Java Spring Boot which can scale out and in based on user demand and handle multiple concurrent requests.

LegoNet (Final Year Undergrad Dissertation) — Link

- Proposed an NLP system using **TensorFlow** to classify and summarize Indian legal judgments using sentence embedding, Capsule Networks and Unsupervised Text Summarization. Achieved a ROUGE-l score of $\approx$0.65 and an F1-score of $\approx$0.7.

Publications

- LegoNet - Classification and Extractive Summarization of Indian legal judgments with Capsule Networks and Sentence Embeddings. Link — 2020
- Pronunciation Training on Isolated Kannada Words Using "Kannada Kali" - A Cloud Based Smart Phone Application. Link — 2018

Honors and Awards

- Received the CNR Rao Merit Scholarship Award - Awarded to top 20% students in the batch at PESU. — 2018
- Awarded the Best Paper/POC Award for POC titled *"Kannada Kali - Learning Languages Made Easy"* among 100+ teams at the IEEE International Conference on Cloud Computing for Emerging Markets. — 2018