Atharva Anand Joshi

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EDUCATION

CARNEGIE MELLON UNIVERSITY
M.S. in Electrical and Computer Engineering (AI/ML Systems)
December 2024 | Pittsburgh, PA

BITS, PILANI CAMPUS
B.E. in Electrical and Electronics Engineering
July 2022 | Pilani, India
GPA: 9.49/10

COURSEWORK

GRADUATE
Machine Learning for Engineers*
Optimization*
Natural Language Processing*
*(*Expected to be completed by Summer 2023)*

UNDERGRADUATE
Neural Networks and Fuzzy Logic
Artificial Intelligence
Probability and Statistics
Linear Algebra
Calculus
Object Oriented Programming (Java)
Operating Systems
Digital Signal Processing
Digital Image Processing
Internet of Things

SKILLS

PROFICIENT
Python3 • Java • C/C++ • MATLAB
TensorFlow • Keras • LaTeX • Git • AWS

INTERMEDIATE
PySpark • Hive • SQL • PyTorch
Raspberry Pi • Arduino • Airflow

AWARDS

- OP Jindal Engineering and Management Scholarship: Business Idea Proposal - Federated Learning for better Healthcare in India (2020 and 2022)
- BITS Pilani Merit-based Scholarship: Awarded to the top 2% of the batch comprising of 1050 students (2019-2022)

ACTIVITIES

- Teaching Assistant for BITS F312 - Neural Networks and Fuzzy Logic.
- Joint Coordinator at Ragamalika, the Classical Music and Dance Club of BITS Pilani, Pilani Campus (2020-2021).

EXPERIENCE

AMERICAN EXPRESS, ARTIFICIAL INTELLIGENCE LABS
Analyst - AiDa Deploy | July - December 2022 | Gurgaon, India

- Researched modelling approaches involving a blend of Tabular deep learning with Tree-based algorithms for the Credit Default Prediction problem.
- Utilized extensively hand-engineered features, along with meta features to improve model performance and develop relevant business insights.

Analyst Intern | January - June 2022 | Gurgaon, India

- Proposed a template-based journey that allows users to seamlessly create and deploy their machine learning pipelines.
- Developed a framework that facilitates deployment of end-to-end Self Learning pipelines for Sequence Models as a part of this journey.

ADOBE RESEARCH, INDIA
Research Intern | May – August 2021 | Bangalore, India

- Created rich user representations that can be projected onto edge servers, hence powering faster marketing services (Concise User Edge Profiles).
- Performed various experiments around the extent of compression and updatability of the representations generated through Multi-task Learning.

PROJECTS

PROACTIVE SERVICING: AMEX ML CHALLENGE
- Combined event sequences and demographic data to predict customer intent at the start of the Ask Amex chat session.
- Employed joint training of Bidirectional GRU with Feedforward Networks.
- Attained a validation top-5 accuracy score of 0.768. Our solution made it to the top 10 leaderboard and was selected for internal presentation.

CONCURRENT VOWEL IDENTIFICATION USING DNN
- Predicted the effect of fundamental frequency (F0) difference on the identification scores in a concurrent vowel identification experiment.
- Trained a temporal network architecture on the neuron responses from the Auditory Nerve Model to model short-term and long-term dependencies.

BIOMEDICAL IMAGE SEGMENTATION
- Implemented the U-Net architecture in Keras for the ISBI dataset.
- Applied strong data augmentation techniques including Normal Augmentation, Overlap Tile Strategy and Random Elastic Transformations.

PATENT

S. Chakraborty, S. Choudhary, A. Sinha, S. Nair, M. Ghuhan, Y. Gagneja, A. Joshi, A. Tyagi, S. Gupta, "Generating Concise and Common User Representations for Edge Systems from Event Sequence Data Stored on Hub Systems", US 17/849,320, Filed Jun 24, 2022.

PUBLICATIONS

[1] A. A. Joshi, P. Bhardwaj, and S. M. Zafaruddin. Terahertz wireless transmissions with maximal ratio combining over fluctuating two-ray fading. In *IEEE Wireless Communications and Networking Conference (WCNC)*, pages 1575–1580, 2022.

[2] A. A. Joshi, H. Settibhaktini, and A. Chintanpalli. Modeling concurrent vowel scores using the time delay neural network and multitask learning. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 30:2452–2459, 2022.