Atharva Anand Joshi

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Electrical and Computer Engineering - Applied Advanced Study — December 2024
Intended Specialization: AI/ML Systems
GPA: 4.0/4.0
Relevant Coursework: Introduction to Machine Learning for Engineers (TA), Optimization, Natural Language Processing

Birla Institute of Technology and Science, Pilani — Pilani, India
Bachelor of Engineering in Electrical and Electronics Engineering — July 2022
GPA: 9.49/10
Relevant Coursework: Neural Networks and Fuzzy Logic (TA), Artificial Intelligence, Object Oriented Programming (Java)

SKILLS

Proficient: Java, Python3, C, MATLAB, TensorFlow, Keras, PyTorch, LaTeX, AWS for ML
Intermediate: Git, Raspberry Pi, Docker

EXPERIENCE

Hewlett-Packard Inc., Poly — Austin, TX
Research and Development Intern — May – August 2023
- Developed a deep learning model that isolates stationary and impulsive background noise from human speech
- Optimized the inference pipeline for memory, compute and latency such that it can directly suppress noise on headsets
- Introduced an efficient approach to Audio ML Development that would make integration into products 6-8 times faster

American Express, Artificial Intelligence Labs — Gurgaon, India
Analyst - Product Development — July - December 2022
- Researched a blend of Tabular Deep Learning models with Tree-based algorithms for the Credit Default Prediction problem
- Enhanced model performance by leveraging extensively hand-engineered features, along with meta features
- Generated valuable business insights pertaining to features selection and effective aggregation of specific temporal features

Analyst Intern — January - June 2022
- 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

Adobe Research, India — Bangalore, India
Research Intern — May - August 2021
- Created rich user representations that can be projected onto edge servers, hence powering faster marketing services
- Performed various experiments around the extent of compression and updatability of the representations generated
- Contributed towards a **patent** as a co-inventor - "Generating Concise and Common User Representations for Edge Systems from Event Sequence Data Stored on Hub Systems" (US 17/849,320 - Filed June 24, 2022)

PROJECTS

Proactive Servicing: American Express ML Challenge
- Utilized 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 and hence made it to the top 10 leaderboard out of ~80 teams

Concurrent Vowel Identification Using DNN
- Predicted effects of fundamental frequency difference on the identification scores in a concurrent vowel identification experiment
- Trained a TDNN augmented with a Multi-task Learning setup on the neuron responses from the Auditory Nerve Model

Biomedical Image Segmentation
- Implemented the U-Net architecture in Keras for the ISBI dataset and applied strong data augmentation techniques including Normal Augmentation, Overlap Tile Strategy and Random Elastic Transformations

PUBLICATIONS

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

ACTIVITIES

- Joint Coordinator at Ragamalika, the Classical Music and Dance Club of BITS Pilani, Pilani Campus (2020-2021)
- Avid practitioner and performer of Hindustani Classical Vocal Music for the past fourteen years