Rohan Chaudhury

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Objective

Strong research background in the fields of Machine Learning & Artificial Intelligence. Proficient Software Engineer with 2+ years of experience in the development of scalable production systems & in managing all phases of the software development lifecycle, from design to execution to maintenance. Looking for Summer 2023 (from May) Machine Learning internship roles.

Education

Texas A&M University, College Station, Texas **August 2021 – December 2023 (Expected)**
Master of Science in Computer Science, with Graduate Scholarship GPA: 4.0/4.0

National Institute of Technology (NIT) Durgapur, India **August 2015 – May 2019**
Bachelor of Technology in Electronics and Communication Engineering Cumulative GPA: 9.25/10

Courses: Deep Learning, Software Engineering, Natural Language Processing, Analysis of Algorithms, Operating Systems, Data Mining

Work Experience

Soft Interaction Lab | ***Graduate Research Assistant*** **Mar – May 2022 & Aug 2022 – Present**
Department of Visualization | *Python, Tensorflow, PyTorch, Hugging Face, Unity* Texas A&M University, College Station

- Spearheaded the development of a Conversational Artificial Intelligence application to serve as a virtual patient for Texas A&M School of Nursing students, replacing manual training methods. Adopted and highly acclaimed by the school.
- Developed a context-aware conversational AI companion with memory for disabled people by fine-tuning gpt-3.5-turbo.

Amazon.com, Inc. | ***Software Development Engineer Intern*** **May 2022 – August 2022**
Java, JavaScript, TypeScript, AWS - Lambda, DynamoDB, Athena, S3, EC2, VPC, CDK, IAM Seattle, Washington

- Developed a full-stack software that procures run-time customer-data consumption details of internal services and analyzes it to show the data consumption statistics and access limitations for the individual services in a dashboard
- Enabled service owners to get a better perspective of the data utilization details, access limitations, and possible security breaches all in one place (with the help of this software), thereby saving 90% manual effort in finding them.

Qualcomm Technologies, Inc.| ***Associate Software Engineer*** **Nov 2019 – Aug 2021**
Artificial Intelligence Software Team | *SNPE, AIMET, Tensorflow, PyTorch, Hugging Face, ONNX* Hyderabad, India

- Optimized several trained Neural Network models (of Samsung, OnePlus, and other OEM customers) utilizing model compression, quantization and fine-tuning techniques, to run the models efficiently on DSP cores of Snapdragon chipsets
- Implemented critical feature requests in Snapdragon Neural Processing Engine SDK to enhance its functionalities
- Developed a new Recommendation System to give suggestions of similar Salesforce issues raised by customers in the past for newly raised customer issues, with a reported accuracy of 74% across various engineering divisions of Qualcomm
- Developed a widely used (more than 1000 internal users/month) Automation Software to automatically download (Selenium), intelligently parse, & generate error logs & reports from device crash dumps sent by customers in Salesforce
- Fixed critical Docker, bokeh server, and documentation bugs in AIMET (Artificial Intelligence Model Efficiency Toolkit)

Projects and Publications

Projects | *Python, C++, Java, PyTorch, Tensorflow, Numpy, Pandas, Javascript, Unity, Android Studio* **2019 – 2023**

- Built a web application by using few-shot learning on gpt-3.5-turbo to generate and post new blogs every hour Website
- Outperformed the baseline model in SemEval 2023 Task-6 for classifying Legal Documents based on their rhetorical roles by modifying baseline model with T5-large tokenizer and encoder & achieved an accuracy of 81.6% Github
- Developed Hierarchical Attention Network for Sentiment Analysis as described in the paper Hierarchical attention networks for document classification and achieved an accuracy of 86.25% using BERT embeddings as input Github
- Utilized GPT-2 text generations capabilities for sentiment analysis (on IMDB dataset) using both few-shot learning and fine-tuning. Obtained an accuracy of 90%. Visualized attention outputs to gain insights and improve accuracy. Github
- Designed an Adaboost classifier for face detection using Viola Jones algorithm with 97% accuracy. Medium article,Code
- Utilized (1) bayesian optimization for hyper-parameter tuning to train a custom Convolutional neural network and (2) fine-tuned pre-trained ResNet50 and MobileNetV2 models for Facial Expression Recognition (ICML 2013). Code
- Estimated public speaking anxiety from VerBio dataset using (1) FNN trained with features modified using filter and wrapper category selection methods and Principal Component Analysis, (2) RNN, GRU, LSTM networks. Poster, Code
- Implemented efficient collaborative filtering and SVD++ matrix factorization as described in Korenś 2008 paper "Factorization meets the neighborhood: a multifaceted collaborative filtering model". Colab, Github
- Discovered and plotted interesting associations by analyzing US congress tweets dataset using word2vec, hugging face models, t-SNE, PCA, and k-means. Colab, Github. Initially explored the dataset using PySpark and graphframes. Code

Publications **2017-18**

- Optimal Integer Order Approximation of Fractional Order Human Ear Simulator, IEEE, ECTI-CON- 2018.

Skills

Programming Experience: Python, Java, C++, C, TypeScript, JavaScript, SQL, Ruby, Bash, C#, HTML/CSS, NoSQL, XML
Tools & Libraries: Amazon Web Services, GCP, Azure, Tensorflow, PyTorch, PySpark, Flask, React, Django, OpenAI, Docker, Git
AI & Others: Dense Passage Retrieval, Retrieval Augmented Generation, Caffe, Keras, OpenCV, Selenium, Spring, Blogger (Medium)