Prasanth Bathala

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Education

Georgia Institute of Technology, *Atlanta, GA* Aug. 2022 – Aug. 2024
Master of Science in Electrical and Computer Engineering, Focus: Machine Learning and AI *GPA - 4.0/4.0*
Coursework : *Statistical Machine Learning, Deep Learning, Adv. Programming Techniques, Medical Image Processing*

Amrita Vishwa Vidyapeetham, *Bengaluru, India* Jul. 2016 – Jul. 2020
Bachelor of Technology in Electrical and Computer Engineering *GPA - 9.5/10*

Key Professional and Research Experience

Machine Learning Engineer, Omdena April 2023 - Present
- Developing AI-powered platform for talent matching and project streamlining in a 8-week Omdena AI challenge team.

Research Assistant, Janus Laboratory | NLP Feb. 2023 – Present
Guide: Prof. Hsiao-Wen Liao, Department of Psychology *Georgia Tech*
- Analyzed 400 interviews using NLP to uncover cultural differences with fine-tuned psychological terms in PyABSA.

Graduate Student Researcher, Pathology Dynamics Lab | NLP Jan. 2023 – Present
Guide: Prof. Cassie S. Mitchell, Department of Biomedical Engineering *Georgia Tech*
 Document Filtering for Drug Repurposing and Clinical Meta-Analysis
- Involved in development of **BioSift**, a new human-annotated document classification dataset for drug repurposing.
- Implemented a suite of **Active Learning-based Multi-label text classifiers** for document classification benchmark.
- Currently carry out **Relationship extraction** on Biomedical Entities to generate **Knowledge graphs**.

Software Engineer, Infosys | Retail Consumer Logistics Nov. 2020 – Aug. 2022
- Automated report generation system for Hallmark Cards using Python. Streamlined CRUD operations in **SUPRA**, **Teradata**, and **DB2** databases and eliminated manual processes.
- Generated data sheets and created advanced Excel dashboard, reducing project completion by 15% (2 weeks of work).
- Worked on Interface Enhancement projects, collaborating with clients to upgrade mainframe interfaces to SAP systems.

Technical Skills

Languages	: Python, C++, MySQL, MATLAB, Java
Concepts	: ML, DL, NLP, Audio, Data Science, Data Analysis, Computer Vision
Frameworks	: Keras, Tensorflow, Pytorch, Scikit-Learn, NLTK, Numpy, Matplotlib, Pandas, Hugging Face, SciPy
Certifications	: Machine Learning, Deep Learning Specialization, Data Structures and Algorithms, SQL for Data Science

Key Projects

3D Point Cloud Classification | *CV, PointNet, DGCNN* *Jan - May 2023*
- Evaluated datasets, preprocessing, models, and loss functions to enhance 3D point cloud classification accuracy.
- Identified limitations of SOTA architectures like **PointNet** and advantages of complex models like **DGCNN**, providing valuable insights for future researchers [*Code*].

Alzheimer's Disease (AD) Prediction and Progression | *DL, CV, 3D CNN, TCN, LSTM* *Jan - May 2023*
- Developed a **3D CNN** model with **RESNET18** architecture, achieving 92.01% accuracy via late fusion of MRI and PET scans for AD status prediction.
- Implemented an **encoder-decoder** network with **TCN** units for accurate future AD risk prediction, and further improved results by incorporating **BiLSTM** units for multi-step predictions.

Depression Detection through Audio, Video & Textual data | *Audio, Video, Text* *Aug - Dec 2022*
- Built a model to detect depression based on clinical interviews integrating audio, video, and textual data.
- Constructed and analyzed three models (**SVM, CNN, LSTM**) to encounter depression.[*Report*]..
- Achieved improved F-1 Score of 70% with early fusion of three modalities using **LSTM**.

Personalized Hotel Finder with Customer Reviews | *BERT, GMM, K-means, SVM, NB* *Aug - Dec, 2022*
- Leveraged large pre-trained models such as **BERT**, **NLTK, SpaCY** to extract Noun-Adjective pairs from **515k hotel reviews**. Employed **hard clustering** to group similar nouns and generate aspects for review personalization [*Report*].
- Computed sentiment of reviews for 1267 hotels across various aspects using customized ML algorithms.[*Website*].

Chatbot Application using DialoGPT | *DialoGPT, RL* *Apr - Jul 2022*
- Design a chatbot application based on pre-trained model, **DialoGPT**, and fine-tuned using PPO.

Publications

- **BioSift: A Dataset for Filtering Biomedical Abstracts for Drug Repurposing**, *accepted at SIGIR 2023*
- **A Comprehensive Evaluation of Biomedical Entity Linking Models**, *Working Paper*

Achievements

- Attained **Rookie of the Quarter** award among top 1% of rookies at Infosys in entire Chennai DC office.
- Received 3 **INSTA Rise** awards for outstanding **Kaizen** contributions and led team activities for 100+ members.