NIKHILESH PRABHAKAR

Email: prabhakar.nikhilesh@gmail.com | **LinkedIn**: in/nikhilesh-prabhakar/ | **Ph:** +1 (336) 875-9019

SUMMARY

A Ph.D. candidate in CS at the University of Texas at Dallas working at the StARLing Lab under the guidance of Dr. Sriraam Natarajan.. I work in the domain of Planning and Reinforcement Learning and Neuro-symbolic Learning.

SKILLS

Programming Languages: Python; C++; R; Ruby; **Web/App Development:** HTM/CSS, Javascript; PHP, SQL, ReactJS; Python (Flask); Dart (Flutter); **NLP Libraries:** nltk, spacy, gensim; ***ML Libraries:*** sci-kit learn, tensorflow, torch; **Data Visualization Libraries:** plotly, matplotlib, seaborn

EDUCATION

The University of Texas at Dallas, Richardson, Texas (May 2022 -)
Ph.D. in Computer Science

The University of Texas at Dallas, Richardson, Texas (Aug 2020 - May 2022)
MS in Computer Science - **GPA - 3.8**

Vellore Institute of Technology, India (July 2016 - May 2020)
B.Tech in Computer Science - **CGPA - 9.23/10**

EXPERIENCE

Teaching Assistant, UT Dallas: (Jan 2022 - May 2023)
Working as a Teaching assistant in UT Dallas for the Digital Logic and Comptuter Design (CS4341) and Machine Learning (CS 6375) courses

Student Assistant, StARLing Labs, UT Dallas (Aug 2021 - Dec 2021)
Worked under Professor Sriraam Natarajan as a student assistant in Starling Labs.

Careband, Machine Learning Consultant (June 2021 – September 2021)
Worked as an ML Consultant and helped in designing models that can effectively predict the type of activity that the wearer is performing. The model uses features from the device's accelerometer raw data which is then classified into one of 8 different activities using LSTMs and dense layers in a Neural Network.

Undergrad TA, Fall 2019: Machine Learning (CSE 4020), 63 students

- Taught lab classes on Ensemble Learning Methods and Convolutional Neural Networks
- Assisted students with their lab exercises and clarified programming doubts during the lab sessions
- Reinforce lessons presented by teachers by reviewing material with students one-on-one or in small groups

Referral Yogi Technologies, Chennai - Software Intern (April 2018 – June 2018)
Worked as a Rails developer and designed the video transcription module for the company platform using Ruby on Rails and Google Speech API. Linked the database with this module to perform automatic batch transcription on video testimonials and processed the output with the sentiment and profile analysis modules that were created parallelly.

PUBLICATIONS

Hybrid Deep RePReL: Integrating Relational Planning and Reinforcement Learning for Information Fusion
Harsha Kokel, Nikhilesh Prabhakar, Balaraman Ravindran, and Erik Blasch, Prasad Tadepalli, Sriraam Natarajan
In 2022 25th International Conference on Information Fusion (FUSION), 2022

Analysis of the Complex Air Transport Network: A Global Perspective
Nikhilesh Prabhakar and Jani Anbarasi L
Social Network Analysis and Mining > Issue 1/2021

POSITIONS OF RESPONSIBILITY

Vice-Chair, IEEE Computer Society Student Chapter, VIT Chennai, (October 2018 - May 2020)

- Co-founded the student chapter in November 2018 (ieeecsvitc.com). Led the student chapter of about 120 committed members with a focus on real-world CS project
- Responsible for managing all events and workshops under IEEE Computer Society

ADDITIONAL COURSEWORK

- **NPTEL: Data Science For Engineers** - IIT Madras (Gold Medalist - Top 1%)
- **DEV290x: Computer Vision and Image Analysis** - Microsoft (edX)
- **CSMM.101x: Artificial Intelligence (AI)** - ColumbiaX (edX)
- **CSMM.102x: Machine Learning (ML)** - ColumbiaX (edX)
- **Green Belt Six Sigma Certified** CS Student - Certification by Pebble Sierra (September 2017)
- **Neural Networks and Deep Learning** - DeepLearning.ai (Coursera)
- **Tensorflow in Practice Specialization** - DeepLearning.ai (Coursera)

PROJECTS

Pneumonia Detection from Chest X-Rays

In this project, I worked on classifying Chest X-Ray scans based on whether the lungs in the image were affected by pneumonia or not. A combination of traditional ML models and deep-learning-based models were compared for predicting. The results showed that, while CNN based neural nets and other state-of-the-art neural nets like VGG-16 and ResNet performed extremely well with F1-scores of 89.9%, 91.3%, and 92%, they didn't have the same levels of recall as the traditional ML models, most of which had a recall of 99%

News Question Answering System

Created a novel dataset (containing approx 400 question-answer pairs) which was used to train a Bi-directional attention-based neural network. The model created was designed to answer questions from a passage. It delivered an F1-score of 59% on the minimal dataset and 76% on the benchmark SQuAD dataset. I combined the model with a news extractor and Google Cloud Speech to Text APIs to make it an interactive question-answering system that can answer text directly from the news.

CrAIve - The Foodie Chatbot (github.com/nikhileshp/Delivery-Chatbot-Assistant/)

Created a voice detecting chatbot that suggests your food based on your cravings. It uses NLTK and Google's Speech API for collecting users' preferences and then scrapes details from food delivery websites like Zomato and Swiggy, compares them, and provides the best deal that's out there. Coded using Python with the UI created from HTML and CSS with a Flask backend

News Classifier (The Hindu Newspaper)

Created a neural network using Tensorflow that was trained on over 10,000 news articles printed in January of 2018 from "The Hindu" newspaper. A multiclass classifier was created that predicted the genre of news articles with very high accuracy.

Sudoku Solver

Created an app that allows users to find solutions to the sudoku puzzles they are struggling to solve. Created a script using python that can automatically solve a sudoku puzzle from a .jpg image using the Backtracking algorithm and digit recognition with OpenCV and a CNN trained on the MNIST handwritten number dataset for digit recognition.