

PRABHAV SINGH

Postal address: P21, Anuj Vihar, Shankar Vihar,
New Delhi, India, 110010

Email: prabhavsingh55221@gmail.com

Phone: +91-9205824219

OBJECTIVE:

To pursue higher studies in the field of Computer Science with a focus on Natural Language Processing. Aims to work on the applications of deep learning in NLP and Speech Processing in an academic role at a University or Research Laboratory and aspires to develop systems that improve the level of Human-Computer Interaction. My long-term goal is to obtain my Ph.D. in the discipline, and my short-term goal is to conduct original research in the field under the guidance of experienced professionals.

EDUCATION:

B.E. in Instrumentation and Control Engineering, NSIT, Delhi

2018 - 2022

SGPA: 8.72/10 (Till 6th Semester)

RELEVANT COURSES:

Introduction to Computer Programming (C++), Data Structures and Algorithms (C++), AI Techniques and Applications (Python), Optimization Techniques (C++ & Matlab), Object Orientation (Java & Python), Mathematics I, Mathematics II, Mathematics III, Numerical Methods (C++), DBMS (Ongoing)

RELEVANT PROJECTS AND INTERSHIPS:

1. **Research Associate (NLP)** at D.Kraft, IIIT Delhi Incubation Center

May 2021 - Present

- Currently working at D.Kraft Singapore as a Research Associate in the NLP Department under Professor Debarka Sengupta.
- Developed an intelligent learning assistant that uses an ALBERT-based Machine Reader in conjugation with a Deep Retriever to assist students in queries and information retrieval.
- Oversaw a team of 4 individuals to research applications of AI in adaptive learning. Developed a custom HMM-based algorithm to automate the allocation of courses to students based on previous knowledge.
- Currently working on developing a model to automate the creation of quizzes from documents using a sequence to sequence model.

2. **Undergraduate Research Assistant** at Department of IT, NSIT

Oct 2020 - Present

- Worked under Prof. K.P.S Rana and Prof. Vineet Kumar at the Department of Information Technology at NSIT, Delhi as an undergraduate researcher.
- Conducted original research in the field of Speech Processing and its integration with NLP. Developed a novel method to predict the emotion contained in human speech and wrote a research paper that was published at [Knowledge-Based System, Elsevier](#).
- The method achieved state-of-the-art accuracy on three datasets.
- Currently working on developing a novel method for abstractive text summarization. Also, developing a system to identify brain cancer from MRI images using a modified 3D U-net model.

3. **Research Intern (NLP)** at Management Development Institute, Gurugram

May 2020 - Sept 2020

- Worked as a research intern under Professor Kirti Sharma and Professor Rajneesh Choubasia to conduct research on 'Comparative Conceptual Analysis of COVID-19 Scenario in the USA and India'.
- Built an ELMo based LSTM Multi-Label Text Classifier for Tweets, which was trained on 60 Million+ data points using AWS Sagemaker Service. Also built a hyper tuned SVC model utilizing Word2Vec to predict country codes of Tweets.
- Also used an LDA-based topic modeling system on the data to compare the COVID-19 scenario in both countries by drawing meaningful information from healthcare-related data.

4. **Full Stack Developer** at The Healthy Company, New Delhi

Aug - Dec 2019

- Worked as a Full Stack Web Developer (Python Stack) at The Healthy Company, a startup with a valuation of over 350,000 US Dollars at the seed level.
- Involved in developing the website using Django. Also developed a smart blog for the Company that was powered by an AI assistant to improve customer conversion rates.

INDEPENDENT PROJECTS:

1. **Study of Supervised Learning Algorithms for Detection of Infants Looming Response**

- Completed a project under the guidance of Prof. Nupur Chugh at NSIT Delhi to implement Canonical Correlation Algorithm using Python to analyze, visualize, and classify Infant EEG (Electroencephalogram) Data and calculate Time to Response (TTR).
- Used ICA and PCA to prepare data for Clustering and further implemented a Neural Network using Keras to perform categorical classification on the data with 95% accuracy.

2. **CNN Based Environmental Sound Classification Using Mixup and Augmentation**

- Implemented a 2 Dimensional Convolution Neural Network to classify sound samples belonging to 10 different classes with 85% accuracy.
- Utilized Librosa Library in Python to extract the Log-Scaled Mel-Spectrogram from sound samples. Also applied Data Augmentation and Mixup to increase training data size.

3. **PORTRAY (Product Ranker and Trend Analyser)**

- Developed an application that uses a custom deep learning-based algorithm to predict and present the top products in a category selected by the user from across the web.
- This is done using state-of-the-art dynamic scraping techniques coupled with a deep learning model to predict the most in-demand products across the web.
- Also developed a full-scale web application for the same.

TECHNICAL CERTIFICATIONS AND PUBLICATIONS:

- "A Multimodal Hierarchical Approach to Speech Emotion Recognition from Audio and Text" - Prabhav Singh, Ridam Srivastava, KPS Rana, Vineet Kumar - Knowledge-Based Systems, Elsevier (<https://doi.org/10.1016/j.knosys.2021.107316>).
- Google Cloud Certified Developer in [Data Engineering, Foundational Data, ML, and AI Tasks](#) in Google Cloud and Exploration of Machine Learning Models with Explainable AI, 2020.
- Web-Development Bootcamp from Udemy, 2019.
- Certification in Data Structures in Python from University of Michigan, Coursera, 2018.

ACTIVITIES AND AWARDS:

- Reached the position of Top 3 contestants at Gridlock 2020 (Flipkart National Hackathon) by developing a fashion trend predictor for the same.
- Ranked in the Top 20 contestants at Myntra Hackathon 2020 by developing an app to improve the protection of employees in the COVID 19 scenario.
- Unlocked access to the coveted Google Foobar Coding Challenge in 2020 and completed all 4 rounds successfully.
- Received the Academic Excellence Award for 2 consecutive years (2016, 2017) for excellent performance in the AISSCE and HSC examinations.
- Served as the Head of Technology and Development for DebSoc NSIT (2019-2021), The Debating Society of NSIT. Involved in heading a team that developed a web app for the society.
- Member of IEEE NSIT since 2018. Conducted multiple classes for students interested in technology, specifically in topics like Python Programming and AI.
- Currently serving as the Vice President of Ashwamedh (The Dramatics Society of NSUT) at my college.