

Anupam Sharma

☎ +91 7002901104 | ✉ anupammrg@gmail.com | 🏠 anp-scp.github.io | 📄 github.com/anp-scp

EDUCATION

M.Tech in Computer Science & Engineering

July 2022 - present

INDIAN INSTITUTE OF TECHNOLOGY GANDHINAGAR, GUJARAT, INDIA

- Advisor: Dr. Krishna Prasad Miyapuram
- CGPA: 9.56/10.0

B.Tech in Computer Science & Engineering

July 2015 - June 2019

CENTRAL INSTITUTE OF TECHNOLOGY, ASSAM, INDIA

- CGPA: 9.14/10.0

PUBLICATIONS

A. Sharma, and K. Miyapuram. 2024. *Evaluating Fast Adaptability of Neural Networks for Brain-Computer Interface*. To appear in the International Joint Conference on Neural Networks 2024 (IJCNN '24)

RESEARCH EXPERIENCE

Brain & Informatics Lab - IIT Gandhinagar

July 2023 - present

ADVISOR: DR. KRISHNA PRASAD MIYAPURAM

- **Fast adaptability of deep learning classifiers for quick calibration of Brain-Computer Interface (BCI) devices.**
 - Worked as the lead researcher and devised a novel strategy to evaluate the fast adaptability of deep learning models that can decode brain signals (EEG) across individuals and tasks absent during model training.
 - Determined components of training pipeline of convolutional neural networks leading to fast adaptation. For example, training techniques and normalization layers.
 - Tested the models on body movement and imagery EEG signals on novel activities and individuals. It achieved competitive performance against complex and state-of-the-art models in all the decoding tasks.
- **Interpretable Brain-Computer Interface (BCI) systems based on deep learning**
 - Partnered with a doctoral colleague and worked on determining EEG channel importance and developing interpretable deep learning models to explain model predictions on EEG signals recorded during visual stimuli.
 - Used modalities like scalograms and topographic maps for training models with EEG signals.
 - Leveraged GradCAM to determine frequencies and spatial regions contributing to model predictions.
 - Statistically analyzed class activation mappings to covert noisy signals into comprehensible interpretations of the model along the time domain and compared with underlying neurological information processing of visual stimuli.

INDUSTRY EXPERIENCE

Project Engineer

Oct 2019 - May 2021

WIPRO LIMITED

- Worker as a Java, REST application, and IAM systems developer.
- Developed batch processor using Spring Batch to fetch user activity data on 10+ platforms from the logs of Software Information and Event Management (SIEM) systems like Splunk and Sumologic for dormant account monitoring.
- Created REST APIs using Spring REST to manage the batch processor, platform access policies, and job statistics for job management by the operations team and integration with the Identity and Access Management (IAM) System.
- Integrated IAM systems with HRMS and security systems like Active Directory and Privileged Access Management systems.
- Curated workflows for user onboarding and approvals management for user application requests.
- Recognized for exemplary performance and valuable contribution to the team in Q2 FY 2020-21.

PROJECTS

Case study on ground truth annotation of text dataset for Sentiment Analysis

Nov 2023

COURSE PROJECT

- Collaborated with a 5-membered team in a project that studied the complexities in the annotation of datasets.
- Wrote Python script to crawl all the comments of the top 100 posts of all time in the subreddit “r/srilanka” via Reddit APIs.
- Determined the agreement between 3 annotators who classified the comments as Positive, Negative, and Neutral.
- Got Krippendorff alpha of 0.3, implying a low degree of inter-annotator agreement. This shows that sentiment analysis could be a difficult task for NLP models, and performance may be highly biased towards the background of annotators.

PyTorch

May 2023

OPEN SOURCE CONTRIBUTION | [LINK]

- Contributed a tutorial written in Python and Sphinx to PyTorch’s official website via Github that describes the use of Torchtext, a PyTorch library, in processing custom text datasets for Natural Language Processing tasks.

DjangoToRest: Rapid REST API development

July 2022 - Dec 2022

INDEPENDENT PROJECT | [LINK]

- Created an open-source library in Python 3 for rapid REST API development in Django REST Framework.
- Improves developer experience by automatic generation of components that involve boilerplate code.
- Wrote Python decorator to automate the generation of Django components, reducing the code-base by 20-40%.
- Integrated with GitHub workflow for automated testing, build, release, and publishing to Python Package Index.

News Aggregator

Aug 2018 - May 2019

COURSE PROJECT

- Programmed a web crawler using Scrapy and Python to crawl articles from the websites of news agencies.
- Trained a text classifier as an ensemble of Support vector Machine (SVM) classifier and Latent Dirichlet Allocation (LDA) to classify news articles among nine categories with an accuracy of 97.31%.
- Devised an algorithm to detect trending events and generate captions from small datasets, achieving a v-measure of 0.67.
- Coded back-end of web application using Java Server Pages to present news, manage content, and administer users.

TEACHING EXPERIENCE

Mentored undergraduate students with subject concepts and assignments, developed assignment resources and assisted the instructor with grading.

- Spring 2024 **Probability, Statistics, and Data Visualisation**, Teaching Assistant, IIT Gandhinagar
- Fall 2023 **Operating Systems**, Teaching Assistant, IIT Gandhinagar
- Spring 2023 **Compiler Design**, Teaching Assistant, IIT Gandhinagar
- Fall 2022 **Introduction to Computing**, Teaching Assistant, IIT Gandhinagar

SKILLS

- Programming **Python3, C, SQL, Java**
- ML, DL & related Libraries **PyTorch, Torchvision, Torchtext, MNE-Python, Scikit-Learn, NumPy, Pandas, Matplotlib**
- Other libraries and tools **Git, Github, Latex, Markdown, MkDocs, Sphinx, Manim, Django REST Framework**