**Amrita Vishwa Vidyapeetham**

**Amrita School of Engineering, Coimbatore**

**Department of Computer Science and Engineering**

**2021– 2022 Odd Semester**

**B.Tech. Fifth Semester 19CSE305 Machine Learning**

**PROJECT TITLES**

1. **Dr. C.Selvi- Recommender Systems and IR**
   1. **Transfer Learning for Resolving Sparsity Problem in Recommender Systems:** With the rapid rise in popularity of ecommerce application, Recommender Systems are being widely used by them to predict the response that a user will give to a given item. This prediction helps in cross selling, upselling and to increase the loyalty of their customers. However due to lack of sufficient feedback data these systems suffer from sparsity problem which leads to decline in their prediction efficiency.
   2. **Security (Profile injection attacks) and Privacy Issues against collaborative filtering in Recommender Systems:** The personal information collected by recommenders raises the risk of unwanted exposure of that information. Also, malicious users can bias or sabotage the recommendations that are provided to other users
   3. **Intelligent Crop Recommendation System:** Design an intelligent system, which intends to assist the Indian farmers in making an informed decision about which crop to grow depending on the sowing season, his farm’s geographical location, soil characteristics as well as environmental factors such as temperature and rainfall.
   4. **An Explainable Recommender System:** In addition to recommending items to the user also explains why the recommendation is being made. Explanations improve user acceptance and system transparency.
   5. **Education and Career Recommender System:** By studying and analyzing interest, social activity, subject score, and other parameters RSs should recommend the fitting course to the students. Similarly, a future job RS shall not only consider the biodata but will study other parameters such as both intelligence quotient and emotional quotient, geographic location and recommend the job/sector where the candidate will have the maximum chance of success.
2. **Dr. Manu Madhavan- NLP, Bio informatics**
3. **Identification of coding/non-coding RNAs:** classification of RNA sequence into coding and non-coding classes, based on the sequence properties
4. **Cluster Analysis of gene expression data:** cluster the genes/samples related cancers to analyse the genetic regulation, sub-type identification, etc
5. **Automated News Categorization:** classify the news articles into predefined categories (like science, economcs, politics...)
6. **Named Entity recognition from Covid related research articles:** Extraction and analysis of named entities related to corona virus (disease, gene, mutation, etc) to analysis the virus spread.
7. **Dr. M. Anbazhagan - Recommender Systems and NLP**
   1. A product recommendation system that alleviates the effect of cold start problem by incorporating user-written reviews
   2. A product recommendation system that recommends quality products by exploiting user-written reviews
   3. A review-based restaurant recommendation system
   4. A content-based video recommendation system that reduces churn rate on OTT media

1. **Dr.Sikha O K- Computer vision and Image processing**
2. Disease diagnosis (detection and classification) from CT scans/Xrays/microscopic images [or Integration of Image Progressing and ML for medical diagnosis of COVID-19 and similar diseases]
3. Human activity detection and recognition / Hand gesture recognition and its application.
4. Object detection and recognition from images/videos
5. A content-based image retrieval system (medical images/natural images)