Course Instructor: Dr Chiranjib Sur

Course Webpage: https://chiranjibsuruf.github.io/courses/da262.html

Email: chiranjib@iitg.ac.in

Objectives: Recommender systems power personalization in nearly every major digital product, helping users discover what matters while driving engagement and revenue. This course teaches the core algorithms and evaluation skills to build trustworthy, scalable recommendations from real user-item data.

Prerequisites: Machine Learning, Deep Learning, Data Mining.

Course Code: DA262

Course Name: Recommender Systems

Credits: 3-0-0-6

Syllabus: Introduction to Recommender Systems; Traditional Recommendation Techniques: Nearest neighbor-based, associative rule-based, content-based filtering, collaborative filtering; Matrix Factorization Techniques: Introduction, SVD review, alternating least squares, non-negative matrix factorization; Advanced Recommendation Techniques: Context-aware, hybrid, model-based methods; Evaluation metrics and methodologies; Recommender System Challenges: Cold start problem, data sparsity, scalability, privacy, and explainability; Case Studies and Applications: E-commerce, social media, multimedia, and other domains; Ethical Considerations in recommendation systems.

Textbooks:

- Charu C. Aggarwal, Recommender Systems: The Textbook, First Edition, Springer, 2016.
- Jannach D., Zanker M., and Fel Fering A., Recommender Systems: An Introduction, First Edition, Cambridge University Press, 2011.

References:

- To be updated as required.