**Department of CSE&IT**

**AY: 2022-23 (ODD Semester)**

**Lecture Plan**

Programme Name: M.Tech (CSE and AI & ML)

Semester: 1st

Course Name & Code: Advances in AI (21M71CS112)

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| Topic Covered | Scheduled date | Actual date | Teaching Mode |
| Introduction of AI, introduction of Machine Learning | 23/08/2022 | 23/08/2022 | BB/PPT |
| Significance of AI and ML, Application areas | 24/08/2022 | 24/08/2022 | BB/PPT |
| Model pipelining | 25/08/2022 | 25/08/2022 | BB/PPT |
| Matrices and its operations | 06/09/2022 | 06/09/2022 | BB/PPT |
| Overview of probability theory, Bayes networks | 07/09/2022 | 07/09/2022 | BB/PPT |
| Independece, I-Maps | 08/09/2022 | 08/09/2022 | BB/PPT |
| Undirected graphical models | 08/09/2022 | 08/09/2022 | BB/PPT |
| Bayesian and Markov networks | 09/09/2022 | 09/09/2022 | BB/PPT |
| Learning, Types of learning | 20/09/2022 | 20/09/2022 | BB/PPT |
| Local models | 21/09/2022 | 21/09/2022 | BB/PPT |
| Exact inference | 22/09/2022 | 22/09/2022 | BB/PPT |
| Clique trees, Belief propagation | 25/09/2022 | 25/09/2022 | BB/PPT |
| Tree construction | 27/09/2022 | 27/09/2022 | BB/PPT |
| Applications solving problems | 28/09/2022 | 28/09/2022 | BB/PPT |
| Introduction to optimization | 29/09/2022 | 29/09/2022 | BB/PPT |
| Approximate inference: sampling | 11/10/2022 | 11/10/2022 | BB/PPT |
| Markov chains | 12/10/2022 | 12/10/2022 | BB/PPT |
| MAP inference | 13/10/2022 | 13/10/2022 | BB/PPT |
| Inference in temporal models | 13/10/2022 | 13/10/2022 | BB/PPT |
| Learning graphical models | 18/10/2022 | 18/10/2022 | BB/PPT |
| Parameter estimation | 19/10/2022 | 19/10/2022 | BB/PPT |
| Bayesian networks and shared parameters | 27/10/2022 | 27/10/2022 | BB/PPT |
| Bayesian networks and shared parameters | 09/11/2022 | 09/11/2022 | BB/PPT |
| structure learning | 10/11/2022 | 10/11/2022 | BB/PPT |
| Partially observed data | 15/11/2022 | 15/11/2022 | BB/PPT |
| Dimension reduction: PCA | 16/11/2022 | 16/11/2022 | BB/PPT |
| Dimension reduction: PCA | 17/11/2022 | 17/11/2022 | BB/PPT |
| Dimension reduction: SVD | 22/11/2022 | 22/11/2022 | BB/PPT |
| Gradient descent | 22/11/2022 | 22/11/2022 | BB/PPT |
| Expected Maximization | 23/11/2022 | 23/11/2022 | BB/PPT |
| Hidden variables, HMM | 23/11/2022 | 23/11/2022 | BB/PPT |
| Undirected models | 24/11/2022 | 24/11/2022 | BB/PPT |
| Undirected structure learning | 24/11/2022 | 24/11/2022 | BB/PPT |
| Causalty, Utility functions | 29/11/2022 | 29/11/2022 | BB/PPT |
| Decision problem, Expected utility | 29/11/2022 | 29/11/2022 | BB/PPT |
| KNN | 30/11/2022 | 30/11/2022 | BB/PPT |
| SVM | 30/11/2022 | 30/11/2022 | BB/PPT |
| NN and its types | 06/12/2022 | 06/12/2022 | BB/PPT |
| NN and its types | 06/12/2022 | 06/12/2022 | BB/PPT |
| K-means, FCM | 07/12/2022 | 07/12/2022 | BB/PPT |
| Introduction to Deep learning for classification and segmentation | 08/12/2022 | 08/12/2022 | BB/PPT |
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Total Lectures: 42 Scheduled: 42 Actual: 42