



Course Name	Machine Learning
References	<ol style="list-style-type: none">1. C.M.Bishop, Pattern Recognition and Machine Learning, 2006.2. T.Hastie, R.Tibshirani, J.Friedman, The elements of statistical learning: data mining, inference, and prediction, Second Edition, Springer, 2005.3. T. Mitchell, Machine Learning, McGraw Hill,19974. .Goodfellow, Y.Bengio, A.Courville, Deep learning. MIT Press, 2016.5. S. Theodoridis, Machine learning: a Bayesian and optimization perspective. Academic Press, Second edition, 2020.6. Kevin P. Murphy, Machine learning: a probabilistic perspective. MIT Press, 2012.7. S.J.Pan, Q.Yang, "A survey on transfer learning", IEEE Transactions on knowledge and data engineering, Vol.22, No. 10, pp.1345-1359, 2010
Course Instructor	Dr. Babak Nasersharif
Syllabus	<ol style="list-style-type: none">1. An Introduction to Machine Learning2. A review on probability and statistics3. A review on linear algebra4. Linear and Non-Linear regressions5. Linear Classifiers6. Linear Classifiers and SVM7. SVM and SVR (support vector regression)8. Neural networks Concepts9. LSTM and RNN for sequence modeling10. Convolutional Neural Networks (CNN)11. AutoEncoders and Deep belief network (DBN)12. Generative Neural networks: variational autoencoders (VAE) and Generative adversarial networks (GAN)13. Nearest Neighbor14. Decision trees15. Decision trees16. Graphical models17. BayesNet : Learning and Inference18. Markov Random Fields