



Office of Academic Research

Details of the Research Scholar					
Name	Dhivya G			Register No.	24PDT0002
Programme	Ph.D (Deep Tech)	School	SBST	Category	IFT
Topic of Research	A study on the detection and validation of Protein-Protein Interaction Inhibitors for Cystic Fibrosis treatment using Machine Learning-driven virtual screening approach				

Details of Online Course					
COURSE TITLE:	Introduction to Machine Learning				
CODE (If Any):	Credit (Common to all Online Courses)	L	T	P	C
		2	0	0	2
Name of the Instructor	PROF. ARUN RAJKUMAR				
Name of the Institution	Department of Computer Science IIT Madras				
Name of the Online Platform	NPTEL				
Online Platform Web Link	https://nptel.ac.in/courses/106106236				
Duration of the Course (Minimum 8 Weeks for NPTEL Platform / 30 Hours for other Online Platforms with assessment support)	8 Weeks				
Start Date	21 Jul 2025	End Date	12 Sep 2025		

About Instructor

Prof.Arun Rajkumar is currently an assistant professor in the department of CSE at IIT Madras. His PhD thesis was in the area of Machine Learning and his broad research interests are in the areas of Machine Learning, sequential decision making.

Course Outline

A short course introducing the main ideas and algorithms of Machine Learning. The goal of the course is to cover the topics at a high level so that it would act as a first course for a full-fledged Machine Learning course. The course will be delivered in spoken Tamil while the technical terms discussed/exams/assignments will be in English.

Course Plan

Week 1: Basics of Linear Algebra, Probability, Optimization

Week 2: Introduction to Supervised Learning - Regression; Topics - Linear Regression; Ridge Regression; LASSO

Week 3: Supervised Learning - Classification; Topics: K-NN, Decision Tree.

Week 4: Supervised Learning - Classification; Topics: Naive Bayes.

Week 5: Supervised Learning - Logistic Regression, Perceptron.

Week 6: Supervised Learning - Support Vector Machines

Week 7: Supervised Learning - Ensemble Methods

Week 8: Unsupervised Learning - K-means Clustering, PCA

References
Deisenroth, M. P., Faisal, A. A., & Ong, C. S. (2020). Mathematics for machine learning. Cambridge University Press.

Approval			
S.No	Name of the Member	Role	Signature
1	Dr. ABILASH V G	Dean Nominee	
2	Dr. RM. VIDHYAVATHI	External Member	
3	Dr. C. JAYAPRAKASH	External Member	
4	Dr. KUMAR K	Internal Member	
5	Dr. MANOOV R	Guide	