

# INTRODUCTION TO MACHINE LEARNING

*Unsupervised Learning Algorithms*

# WORKSHOP DETAILS

- Instructor: Tanya Khanna
- Email: [tk759@scarletmail.rutgers.edu](mailto:tk759@scarletmail.rutgers.edu)
- Course Materials: Github Link - <https://github.com/Tanya-Khanna/Data-Science-Workshop---Spring-2025---NBL->
- Workshop Recordings: <https://libguides.rutgers.edu/datascience/python>

# WORKSHOPS SCHEDULE

Introduction to Python Programming	February 3, 2025; 2 – 3:30 PM
Mastering Data Analysis: Pandas and Numpy	February 10, 2025; 2 – 3:30 PM
Introduction to Tableau: Visualizing Data Made Easy	February 17, 2025; 2 – 3:30 PM
Introduction to Machine Learning: Supervised Learning	February 24, 2025; 2 – 3:30 PM
Introduction to Machine Learning: Unsupervised Learning	March 3, 2025; 2 – 3:30 PM
Data-Driven Decision Making: <div><div></div><div></div><div></div></div> A/B Testing and Statistical Hypothesis Testing	March 10, 2025; 2 – 3:30 PM
Demystifying Generative AI	March 24, 2025; 2 – 3:30 PM
Large Language Models: From Theory to Implementation	March 31, 2025; 2 – 3:30 PM
Generative AI Applications with AI Agents	April 7, 2025; 2 – 3:30 PM
Building Intelligent Recommendation Systems	April 14, 2025; 2 – 3:30 PM

<https://libcal.rutgers.edu/calendar/nblworkshops?cid=4537&t=d&d=0000-00-00&cal=4537&inc=0>

# TABLE OF CONTENTS

1. *Fundamentals of Unsupervised Learning*
2. *Types of Unsupervised Learning: Clustering, Dimensionality Reduction & Association Rule Mining*
3. *Practical End-to-End example combining KMeans Clustering & PCA*
4. *DBSCAN Clustering: Theory*
5. *Market Basket Analysis: Practical Example*