

MACHINE LEARNING BOOT CAMP PART 1: DATA PREP

Course Code: 840015

Empower your machine learning models with the best in data preprocessing and analysis techniques.

In the world of machine learning, the quality of input data is critical. Machine learning models that use bad data input produce inaccurate and unreliable results, undermining their effectiveness and trustworthiness. Our **Machine Learning Essentials Boot Camp: Preparing Your Data** is a three-day hands-on skills immersion course geared for students who need to how to effectively prepare and optimize data for use in machine learning models, ensuring they produce accurate, useful and insightful predictions.

Throughout the course, guided by our expert instructor, you'll engage in workshop-style practical labs that will provide you with the real-world skills and hands-on experience needed to manage, prep and clean your data for successful machine learning model applications.

You'll learn how to translate diverse data into an analytically-friendly format, ensuring compatibility with machine learning algorithms. You'll learn how to scale and normalize data, ensuring consistent data representation, crucial for accurate model training and predictions. You'll navigate the intricacies of data transformation and refinement, and learn how to translate diverse datasets into formats friendly to machine learning algorithms. You'll also explore feature selection and dimensionality reduction, striking the balance between data richness and computational efficiency. You'll also grasp how to safeguard your data's journey with robust pipelines and preventive measures against data leakage, cementing the trustworthiness of your real-world model deployments. Lastly, you'll explore the complete lifecycle of a machine learning project, from data preparation to model deployment, you're equipped to oversee and implement comprehensive data-driven solutions.

By the end of this immersive boot camp, you'll be fully-equipped with a comprehensive skillset that not only enhances the predictive power of your models but also sets the foundation for innovative, data-driven solutions. You'll be ready to advance in your Machine Learning journey, leveraging your newly acquired skills towards model proficiency.

What You'll Learn

Throughout the course you will explore:

- **Data Encoding:** Dive into data encoding to seamlessly translate diverse information into a machine-friendly format.
- **Data Manipulation Mastery:** You'll get comfortable with encoding, scaling, and normalizing data. By the end of the course, the curse of dimensionality will no longer be a challenge.
- **Quality Analysis Confidence:** Learn how to identify and remove duplicates, handle null values, manage outliers, and work with dates in your data. You'll be a pro at maintaining clean datasets.
- **Feature Analysis Wizardry:** Discover how to identify unused columns, detect low variance ones, and understand multicollinearity. By the end of the workshop, feature selection will feel like second nature.
- **Pipeline Proficiency:** Gain a deep understanding of the critical role of pipelines in machine learning and develop the skills to create and implement your own data preprocessing pipelines.
- **Machine Learning Basics:** Get introduced to the fundamentals of machine learning, understand k-fold cross-validation, master the art of partitioning data, and learn how to prevent data leakage. You'll be set to step confidently into the world of machine learning.

Who Needs to Attend

This course is geared for data scientists and business professionals seeking to leverage data insights in decision-making. It's also ideal for software developers wanting to diversify their skills into the exciting field of machine learning.

Whether you're a student eager to jumpstart your career or an experienced professional looking to enhance your data-driven strategies, our hands-on workshop offers a valuable learning experience to transform you into a confident data handler and problem-solver.

Prerequisites

This is an intermediate-level program, designed to prepare attendees for a deeper dive into next-level, heavy hands-on machine learning courses and workshops. Attendees should have practical, hands-on experience working with Python for Data Science, pandas and numpy.

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