Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511)

Category: AI, Data & Analytics | **Vendor:** Trivera Tech

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Our engaging®Machine Learning Essentials Boot Camp®is a comprehensive workshop style program designed to provide you with expert level guidance deep diving the latest skills, tools and trends in AI and machine learning, from the ground up. Throughout the program you'll learn how to leverage and apply the latest tech to help you master and transform your data, build efficient models and simplify complex tasks using this innovative tech to your advantage.

About This Course

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This course is typically run as a three-day program, but can also be structured as a multi-week short course event at the convenience of your team or organization. Each program section drills down on a core skill that is fully wrapped with meaningful business examples, data sets, hands-on labs and uses cases focused completely on real-world application. Once you've mastered the essentials skills, we revisit the core topics and apply the latest tools and tech in AI to show you how to maximize efficiency and productivity, saving you countless hours on every project. It's critical to understand the backbone and structure of your work before jumping into leveraging AI tooling, as you need to understand your project input, goals, and desired outcomes in order to use these technologies correctly to create accurate, trusted results.

Throughout the course, you'll explore key skills and concepts including regression analysis, binary and multiclass classification, model performance, generalization, hyperparameter tuning, and feature engineering, among others. You'll also gain practical experience dealing with imbalanced datasets, implementing dimensionality reduction techniques, and understanding ensemble learning methods. The course is rich with hands-on useful labs and group activities that focus on core skills, problem solving techniques and real-world application using data-driven solutions and best practices. You'll leave the course ready to jump into any machine learning project in a meaningful way, able to design, train, evaluate, and fine-tune powerful machine learning models right out of the gate, using the most efficient tools, tech and best practices available today.

Who Should Attend

This course is ideally suited for Python developers, data analysts, and aspiring data scientists looking to expand their skills into AI and Machine Learning. It is also highly beneficial for product managers and business leaders aiming to acquire a hands-on understanding of AI's impact on product development and business strategy.

Prerequisites & Entry Requirements

General Prerequisites:

Python Programming: Students should have a strong understanding of the Python programming language. This includes the syntax of the language, how to define and use functions, and how to work with Python's built-in data structures like lists and dictionaries.

Basic Statistics (helpful but not required): A foundational understanding of statistics is crucial for many data science concepts. Students should be familiar with concepts such as mean, median, standard deviation, correlation, and the basics of statistical inference.

Data Analysis: Experience with exploratory data analysis, including the ability to manipulate and analyze data, is crucial. This includes skills like cleaning data, investigating distributions and correlations, and creating visualizations.

Basic Machine Learning Knowledge: While the course will likely delve into machine learning in detail, having a basic understanding of what machine learning is and the types of problems it can solve will be useful. This includes familiarity with concepts such as training data, testing data, overfitting, underfitting, and cross-validation.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

Our experts help you dive deep into essential tech skills, navigate through challenges, and prepare you to use what you've learned with confidence, and the platform provides you with the path and resources for long term success.
Some of the core topics you'll explore include:
-Regression Analysis: Master the technique to understand and predict the relationship between dependent and independent variables.
-Binary and Multiclass Classification: Learn to categorize data into distinct categories or classes.
-Hyperparameter Tuning: Fine-tune machine learning algorithms to optimize their performance.
-Feature Engineering: Acquire the skill to select and transform variables to improve model accuracy.
-Handling Imbalanced Datasets: Develop strategies to work with datasets where target classes are unevenly distributed.
-Dimensionality Reduction: Grasp methods to reduce the number of random variables and ensure models are efficient.
-Ensemble Learning: Understand how to combine multiple models to enhance prediction accuracy.
-Model Evaluation: Become adept at assessing the performance of machine learning algorithms.
-Python Programming for AI: Gain proficiency in utilizing Python for building AI-driven applications.
-Generalization Techniques: Learn to build models that perform well on unseen data.
-Data Preprocessing: Understand techniques for cleaning, transforming, and normalizing raw data for optimal model training.
-Advanced Algorithms: Dive deep into sophisticated machine learning algorithms to tackle complex data tasks.
-Ethics in AI and Machine Learning: Explore and emphasize the ethical considerations, security and privacy issues in Ai and Machine Learning.
-Using ChatGPT and Other Tools: Using relevant AI tools to increase efficiency and productivity
-Building a Complete AI Driven Application: You'll also have a hands-on experience building an AI app in a capstone project.

Detailed Course Outline

Introduction and Regression

Understanding the Python ecosystem for data science

Review of Python libraries relevant to data science

Basics of regression analysis

Linear regression in Python

Multiple regression analysis

Hands-on Lab: Regression Analysis with Python

Classification and Cluster Analysis

Understand and implement binary and multiclass classification.

Implement and assess the quality of a cluster analysis.

Logistic regression for binary classification

Performance metrics for binary classification

Hands-On Lab: Binary Classification

Overview of multiclass classification

Understanding and implementing RandomForest

Hands-On Lab: Multiclass Classification with RandomForest

Introduction to cluster analysis

K-Means clustering in Python

Assessing cluster quality

Hands-On Lab: Cluster Analysis

Model Performance, Generalization, and Hyperparameter Tuning

Evaluate model performance using relevant metrics.

Understand and implement techniques for model generalization.

Learn about hyperparameters and methods for tuning them.

Understanding confusion matrix, precision, recall, F1 score

ROC and AUC analysis

Hands-On Lab: Model Performance Assessment

Understanding overfitting and underfitting

Cross-validation for model generalization

Hands-On Lab: Model Generalization Techniques

Introduction to hyperparameters and their importance

Grid search and random search for hyperparameter tuning

Hands-On Lab: Hyperparameter Tuning with Python

Model Interpretation, Dataset Analysis, Data Preparation

Learn techniques for interpreting model coefficients and understanding feature importance.

Hands-On Lab: Machine Learning Model Interpretation

Techniques for data exploration and visualization

Learn methods for data exploration, visualization, univariate, and multivariate analysis.

Hands-On Lab: Dataset Analysis with Python

Dealing with missing values

Outlier detection and handling

Encoding categorical variables

Hands-On Lab: Data Preparation with Python

Feature Engineering, Imbalanced Datasets, Dimensionality Reduction, and Ensemble Learning

Learn techniques for feature engineering and handling imbalanced datasets.

Understand and implement dimensionality reduction techniques.

Hands-On Lab: Feature Engineering and Dimensionality Reduction

Learn about ensemble learning methods and their implementation.

Implementing ensemble learning methods

Hands-On Lab: Ensemble Learning with Python

Capstone Project / Workshop

Students will build their own AI investor using Python. Students will gain an understanding of the stock market approach from a purely data driven perspective, and will use that to build a stock investor. Students will be able to customize the investor (aggressive or defensive).

Hands-On Lab: Project Workshop

Apply learned techniques to a given problem statement.

Understand how to troubleshoot and improve model performance.

OPTIONAL / Additional Time Required / Project Presentations and Course Wrap-Up

Present the final project and receive feedback.

Review the key learning outcomes from the course.

Additional Course Details

Nexus Humans Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMl5511) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMl5511) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511) course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511) training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511)?

Yes, we provide corporate training, dedicated training, and closed classes for Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: AI; Machine Learning

Q: Why choose Nexus Human for Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Machine Learning Boot Camp / SkillJourney / Part 2: Essentials Deep Dive Workshop (TTMI5511) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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