Machine Learning Essentials for Scala Developers (TTML5506-S)

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

Machine Learning Essentials for Scala Developers®is a three-day course designed to provide a solid introduction to the world of machine learning using the Scala language. Throughout the hands-on course, you'll explore a range of machine learning algorithms and techniques, from supervised and unsupervised learning to neural networks and deep learning, all specifically crafted for Scala developers.

About This Course

Discover the power of machine learning with Scala, a versatile and high-performance programming language perfect for
handling large-scale data processing and analysis. Put your Scala skills to work learning how to build intelligent applications and solve complex problems across various domains®®without the need for deep mathematical expertise.

Machine Learning Essentials for Scala Developers is a three-day course designed to provide a solid introduction to the world of machine learning using the Scala language. Throughout the hands-on course, you'll explore a range of machine learning algorithms and techniques, from supervised and unsupervised learning to neural networks and deep learning, all specifically crafted for Scala developers.

Our expert trainer will guide you through real-world, focused hands-on labs designed to help you apply the knowledge you gain in real-world scenarios, giving you the confidence to tackle machine learning challenges in your own projects.

You'll dive into innovative tools and libraries such as Breeze, Saddle, DeepLearning.scala, GPT-Scala (and Generative AI with Scala), and TensorFlow-Scala. These cutting-edge resources will enable you to build and deploy machine learning models for a wide range of projects, including data analysis, natural language processing, image recognition and more.

Upon completing this course, you'll have the skills required to tackle complex projects and confidently develop intelligent
applications. You'll be able to drive business outcomes, optimize processes, and contribute to innovative projects that
leverage the power of data-driven insights and predictions.

Who Should Attend

This course is geared for experienced Scala developers who are new to the world of machine learning and are eager to
expand their skillset. Professionals such as data engineers, data scientists, and software engineers who want to harness the
power of machine learning in their Scala-based projects will greatly benefit from attending.

Additionally, team leads and
technical managers who oversee Scala development projects and want to integrate machine learning capabilities into their
workflows can gain valuable insights from this course.

Learning Outcomes

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

Working in a hands-on learning environment led by our expert instructor you'll:
- Grasp the fundamentals of machine learning and its various categories, empowering you to make informed decisions about which techniques to apply in different situations.
- Master the use of Scala-specific tools and libraries, such as Breeze, Saddle, and DeepLearning.scala, allowing you to efficiently process, analyze, and visualize data for machine learning projects.
- Develop a strong understanding of supervised and unsupervised learning algorithms, enabling you to confidently choose the right approach for your data and effectively build predictive models.
- Gain hands-on experience with neural networks and deep learning, equipping you with the know-how to create advanced applications in areas like natural language processing and image recognition.
- Explore the world of generative AI and learn how to utilize GPT-Scala for creative text generation tasks, broadening your skill set and making you a more versatile developer.
- Conquer the realm of scalable machine learning with Scala, learning the secrets to tackling large-scale data processing and analysis challenges with ease.
- Sharpen your skills in model evaluation, validation, and optimization, ensuring that your machine learning models
perform reliably and effectively in any situation.

Detailed Course Outline

Introduction to Machine Learning and Scala

Learning Outcome: Understand the fundamentals of machine learning and Scala's role in this domain.

What is Machine Learning

Machine Learning with Scala: Advantages and Use Cases

Lab: Setting up your environment (OPTIONAL)

Supervised Learning in Scala

Learn the basics of supervised learning and how to apply it using Scala.

Supervised Learning: Regression and Classification

Linear Regression in Scala

Logistic Regression in Scala

Lab: Linear Regression Model

Unsupervised Learning in Scala

Understand unsupervised learning and how to apply it using Scala.

Unsupervised Learning: Clustering and Dimensionality Reduction

K-means Clustering in Scala

Principal Component Analysis in Scala

Lab: K-means Clustering: Apply K-means clustering to a dataset in Scala using Breeze.

Neural Networks and Deep Learning in Scala

Learning Outcome: Learn the basics of neural networks and deep learning with a focus on implementing them in Scala.

Introduction to Neural Networks

Feedforward Neural Networks in Scala

Deep Learning and Convolutional Neural Networks

Lab: Feedforward Neural Network: Build a simple feedforward neural network in Scala using DeepLearning.scala.

Introduction to Generative AI and GPT in Scala

Gain a basic understanding of generative AI and GPT, and how to utilize GPT-Scala for natural language tasks.

Generative AI: Overview and Use Cases

Introduction to GPT (Generative Pre-trained Transformer)

GPT-Scala: A Library for GPT in Scala

Lab: Text Generation with GPT-Scala

Reinforcement Learning in Scala

Understand the basics of reinforcement learning and its implementation in Scala.

Introduction to Reinforcement Learning

Q-learning and Value Iteration

Reinforcement Learning with Scala

Lab: Q-learning in Scala: Implement a simple Q-learning algorithm in Scala to solve a gridworld problem.

Time Series Analysis using Scala

Learn time series analysis techniques and how to apply them in Scala.

Introduction to Time Series Analysis

Autoregressive Integrated Moving Average (ARIMA) Models

Time Series Analysis in Scala

Lab: Time Series Forecasting: Perform time series forecasting using Scala with an ARIMA model.

Natural Language Processing (NLP) with Scala

Gain an understanding of natural language processing techniques and their application in Scala.

Introduction to NLP: Techniques and Applications

Text Processing and Feature Extraction

NLP Libraries and Tools for Scala

Lab: Text Classification in Scala: Description: Implement a text classification model in Scala using Breeze and Saddle.

Image Processing and Computer Vision with Scala

Learn image processing techniques and computer vision concepts with a focus on implementing them in Scala.

Introduction to Image Processing and Computer Vision

Feature Extraction and Image Classification

Image Processing Libraries for Scala

Lab: Image Classification in Scala.

Model Evaluation and Validation

Understand the importance of model evaluation and validation, and how to apply these concepts using Scala.

Model Evaluation Metrics

Cross-Validation Techniques

Model Selection and Tuning in Scala

Lab: Model Evaluation in Scala

Scalable Machine Learning with Scala

Learn how to handle large-scale machine learning problems using Scala.

Challenges of Large-Scale Machine Learning

Data Partitioning and Parallelization

Distributed Machine Learning with Scala

Lab: Parallelized Machine Learning: Implement a parallelized version of a machine learning algorithm in Scala.

Machine Learning Deployment and Production

Understand the process of deploying machine learning models into production using Scala.

Deployment Challenges and Best Practices

Model Serialization and Deserialization

Monitoring and Updating Models in Production

Lab: Model Deployment with Scala

Addendum: Next Steps in Machine Learning with Scala

Bonus Chapters / Time Permitting

Ensemble Learning Techniques in Scala

Discover ensemble learning techniques and their implementation in Scala.

Introduction to Ensemble Learning

Bagging and Boosting Techniques

Implementing Ensemble Models in Scala

Lab: Implementing a Random Forest model

Feature Engineering for Machine Learning in Scala

Learn advanced feature engineering techniques to improve machine learning model performance in Scala.

Importance of Feature Engineering in Machine Learning

Feature Scaling and Normalization Techniques

Handling Missing Data and Categorical Features

Lab: Feature Selection and Transformation

Advanced Optimization Techniques for Machine Learning

Understand advanced optimization techniques for machine learning models and their application in Scala.

Gradient Descent and Variants

Regularization Techniques (L1 and L2)

Hyperparameter Tuning Strategies

Lab: Hyperparameter Tuning with Grid Search

Additional Course Details

Nexus Humans Machine Learning Essentials for Scala Developers (TTML5506-S) 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 Essentials for Scala Developers (TTML5506-S) 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 Essentials for Scala Developers (TTML5506-S)?

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 Essentials for Scala Developers (TTML5506-S) 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 Essentials for Scala Developers (TTML5506-S) 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 Essentials for Scala Developers (TTML5506-S)?

Yes, we provide corporate training, dedicated training, and closed classes for Machine Learning Essentials for Scala Developers (TTML5506-S). 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: Scala; Machine Learning

Q: Why choose Nexus Human for Machine Learning Essentials for Scala Developers (TTML5506-S)?

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 Essentials for Scala Developers (TTML5506-S) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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