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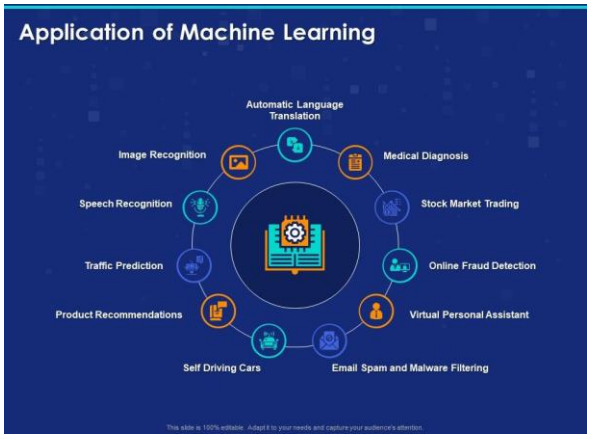
Hands On Machine Learning Workshop Brochure

May 1, 2023

Machine Learning Overview



In today's rapidly evolving landscape, the power of machine learning has become undeniable. From startups to Fortune 500 companies, organizations of all sizes are embracing the potential of machine learning and AI to drive their growth and innovation. The field of deep learning, a subset of AI, is at the forefront of this revolution, exceeding our expectations and reshaping emerging markets.

With the advent of deep neural networks, fueled by advanced algorithms, massive

amounts of data, and the computational capabilities of GPUs, AI is undergoing a remarkable transformation. Machines now possess the ability to acquire knowledge at an unprecedented speed, with unmatched precision and scalability. This progress has ushered in the era of true artificial intelligence and AI computing.

To keep pace with these developments, it is crucial to stay informed about the latest trends and techniques in designing, training, and implementing neural network-driven machine learning in your applications. By exploring the vast array of popular open-source frameworks and deep learning platforms, you can tap into the transformative potential of AI and reshape the landscape of your industry.

Join us in our hands-on machine learning course where you will delve into real-world examples, code practical projects, and gain the skills to leverage the power of deep learning and AI. Whether you are a seasoned data scientist or just beginning your journey in machine learning, this course will equip you with the knowledge and tools to unlock the full potential of machine learning in your organization. Don't miss out on this opportunity to be at the forefront of the AI revolution!

Learning Outcome

By the end of this hands-on machine learning course, participants will be able to:

1. Understand the fundamental concepts of machine learning, including supervised and unsupervised learning, and their applications in various industries.

2. Set up a Python environment with essential libraries for machine learning and data analysis.

3. Perform exploratory data analysis (EDA) to gain insights into datasets and visualize key patterns and relationships.

4. Preprocess and clean data by handling missing values, encoding categorical variables, and scaling features appropriately.

5. Build and evaluate regression models for predictive analysis, including interpreting model results and assessing model performance.

6. Implement classification algorithms and assess their performance using appropriate evaluation metrics.

7. Apply clustering techniques to discover patterns and groupings in unlabeled data.

8. Select and evaluate models using cross-validation techniques and understand the importance of hyperparameter tuning.

9. Deploy machine learning models and integrate them into real-world applications, including building APIs and considering scalability challenges.

10. Apply the learned techniques and skills to their own projects and continue exploring advanced topics in machine learning.

By achieving these learning outcomes, participants will gain the practical knowledge and skills necessary to successfully apply machine learning algorithms and techniques to real-world problems, enhancing their ability to make data-driven decisions and contribute to their organization's growth and innovation.

Course Outline

Title: Hands-on Machine Learning with Python: Practical Training Course

Day 1

Introduction to Machine Learning and Python Libraries

1. Welcome and Course Overview

- Introduce the instructor(s) and provide an overview of the training course.

- Explain the objectives and structure of the course.

2. Introduction to Machine Learning

- Define machine learning and its applications in various industries.

- Discuss different types of machine learning algorithms (supervised, unsupervised, and reinforcement learning).

3. Setting Up the Environment

- Guide participants through the installation of Python and essential libraries (e.g., NumPy, Pandas, Matplotlib, and Scikit-learn).

- Provide instructions on how to set up an integrated development environment (IDE) for coding.

4. Exploratory Data Analysis (EDA)

- Discuss the importance of EDA in understanding the dataset.

- Demonstrate techniques for data visualization and statistical analysis using Python libraries.

5. Preprocessing and Data Cleaning

- Explain the significance of preprocessing and data cleaning.

- Cover techniques such as handling missing data, encoding categorical variables, and feature scaling.

6. Supervised Learning: Regression

- Introduce regression as a predictive modeling technique.

- Implement linear regression using Scikit-learn.

- Evaluate and interpret regression models using metrics and visualizations.

Day 2

Advanced Topics in Machine Learning and Model Deployment

1. Recap of Day 1

- Summarize the key concepts covered on the previous day.

- Address any questions or concerns participants may have.

2. Supervised Learning: Classification

- Introduce classification and its applications.

- Implement popular classification algorithms (e.g., logistic regression, decision trees, and random forests).

- Evaluate and compare classification models using appropriate metrics.

3. Unsupervised Learning: Clustering

- Define clustering and its use cases.

- Demonstrate clustering algorithms (e.g., K-means, hierarchical clustering, and DBSCAN).

- Evaluate clustering results and discuss interpretation.

4. Model Selection and Evaluation

- Explain the importance of model selection and cross-validation techniques.

- Discuss methods for hyperparameter tuning and model evaluation.

5. Model Deployment and Scalability

- Introduce the concept of deploying machine learning models in real-world scenarios.

- Cover techniques for model deployment, including building APIs and integrating models into production systems.

- Discuss scalability challenges and strategies for handling large datasets.

6. Conclusion and Next Steps

- Recap the main topics covered throughout the course.

- Provide additional resources and references for further learning.

- Encourage participants to apply the knowledge gained to their own projects.

Note: The outline is a general framework and can be adjusted based on the specific needs and requirements of the training course. The timing and depth of each topic can be modified accordingly to ensure sufficient hands-on coding and real-world examples.

Workshop Fee

2 Day Hands on Machine Learning Workshop

Online Mode

- Government Institution/NGO - RM 300/participant
- Private Company - RM 400/participant

On-Site Mode

- Government Institution/NGO - RM 400/participant
- Private Company - RM 500/participant

Other Arrangement

Kindly email info@deeplearningmy.com for further information and available date.