TMY-DS07: Deep Learning and Natural Language Processing

Course Code: TMY-DS07
Duration: 4 days
Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

OVERVIEW

Deep Learning and Natural Language Processing

Deep Learning and Natural Language Processing (NLP) have revolutionized the way we interact with and analyze text data. This four-day course, tailored for beginners, provides a comprehensive introduction to the foundations of deep learning and its application in NLP. Participants will gain a strong understanding of neural networks, language processing, and hands-on experience in building NLP models.

SKILLS COVERED

By the end of this course, participants will:

- Understand the fundamentals of deep learning and its relevance in NLP.
- Be proficient in building and training neural networks.
- Gain practical experience in preprocessing and analyzing text data.
- Learn to develop NLP applications, including sentiment analysis, text classification, and language generation.
- Develop the skills to apply deep learning and NLP to real-world text data.
- Feel confident to continue exploring more advanced deep learning and NLP techniques.

WHO SHOULD ATTEND?

- Beginner level courses for aspiring Data Scientist.
- Anyone who is interested in data science.

PREREQUISITES

There are no prerequisites required to attend this course.

MODULES

Module 1: Introduction to Deep Learning

- What is deep learning and its significance in machine learning.
- Introduction to neural networks.
- Data preprocessing and text tokenization.
- Building a neural network using Python and TensorFlow/Keras.
- Model training, optimization, and loss functions.
- Practical exercises and projects with basic neural networks.

Module 2: Natural Language Processing (NLP) Fundamentals

- Introduction to NLP and its applications.
- Text data preprocessing: Tokenization, stemming, and lemmatization.
- Text vectorization and feature extraction.
- Sentiment analysis using NLP.
- Text classification and document classification.
- Hands-on exercises with NLP techniques.

Module 3: Advanced NLP Techniques and Applications

- Word embeddings and Word2Vec.
- Named Entity Recognition (NER) and Part-of-Speech (POS) tagging.
- Text generation and language modeling.
- Building a chatbot with deep learning and NLP.
- Practical projects and applications in NLP.
- Model evaluation for NLP tasks

Module 4: Real-World NLP Projects and Course Conclusion

- Real-world NLP projects and case studies.
- Challenges and best practices in NLP.
- Final project assignment and guidelines.
- Final project presentations.
- Course wrap-up, Q&A, and next steps in deep learning and NLP journey.
- Certificate distribution

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