INFOSOFT IT SOLUTIONS

Training | Projects | Placements

Revathi Apartments, Ameerpet, 1st Floor, Opposite Annapurna Block,

Infosoft It solutions, Software Training & Development Institute, 9059683947|9182540872

AI & Deep Learning with Tensor

Introduction to Artificial Intelligence and Deep Learning

- Overview of Artificial Intelligence (AI) and its subfields
- Introduction to Deep Learning (DL) and its applications
- Brief history and evolution of Deep Learning

Foundations of Machine Learning

- Basics of Machine Learning (ML) algorithms
- Supervised, Unsupervised, and Reinforcement Learning
- Model evaluation and performance metrics

Introduction to TensorFlow

- Introduction to TensorFlow and its ecosystem
- TensorFlow vs. other Deep Learning frameworks (PyTorch, Keras)
- Installing TensorFlow and setting up the development environment

TensorFlow Basics

- Tensors and operations in TensorFlow
- Building computational graphs
- Executing computations with TensorFlow sessions

Neural Networks with TensorFlow

- Building Neural Networks using TensorFlow
- Activation functions, loss functions, and optimization algorithms (SGD, Adam)
- Training Neural Networks with TensorFlow

Convolutional Neural Networks (CNNs)

- Understanding Convolutional Neural Networks (CNNs)
- Building CNNs for image classification tasks
- Transfer Learning with pre-trained CNN models (e.g., VGG, ResNet)

Recurrent Neural Networks (RNNs)

- Introduction to Recurrent Neural Networks (RNNs)
- Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU)
- Applications of RNNs in sequence modeling (e.g., text generation, language translation)

Advanced Deep Learning Architectures

- Generative Adversarial Networks (GANs) and their applications
- Autoencoders for unsupervised learning and dimensionality reduction
- Sequence-to-Sequence models for language translation and speech recognition

Natural Language Processing (NLP) with TensorFlow

- Basics of Natural Language Processing (NLP)
- Word embeddings (Word2Vec, GloVe) and text preprocessing
- Building NLP models using TensorFlow for sentiment analysis, named entity recognition, etc.

Advanced Topics in TensorFlow

- Customizing models with TensorFlow's high-level APIs (tf.keras)
- Distributed TensorFlow for scaling Deep Learning models
- TensorFlow Serving for model deployment and serving predictions

Ethical and Social Implications of AI

- Bias and fairness in AI algorithms
- Privacy concerns and data security in Deep Learning applications
- Ethical considerations in AI research and deployment

Hands-on Projects and Case Studies

- Implementing end-to-end Deep Learning projects with TensorFlow
- Case studies of TensorFlow applications in industries such as healthcare, finance, and autonomous driving

Deployment and Productionization

- Deploying TensorFlow models in production environments
- Containerizing models with Docker and serving with Kubernetes
- Monitoring and maintaining TensorFlow models in production

Research Trends and Future Directions

- Emerging trends in Deep Learning research
- Future directions of TensorFlow and AI technologies

Career Development

- Preparation for TensorFlow Developer certification (if applicable)
- Career paths in AI and Deep Learning: Data Scientist, Machine Learning Engineer, AI Researcher