Personalized Learning Plan

Create Study Schedule

Study Plan for B.Tech. Artificial Intelligence and Data Science - Deep Learning Techniques:

Week 1-2:

Module I - Introduction to Deep Learning:

- Learning algorithms and maximum likelihood estimation
- Building machine learning algorithm
- Neural Networks Multilayer Perceptron
- Back-propagation algorithm and its variants
- Stochastic gradient descent
- Curse of Dimensionality

Week 3-4:

Module II - Deep Learning Architectures:

- Machine Learning and Deep Learning
- Representation Learning
- Width and Depth of Neural Networks
- Activation Functions (RELU, LRELU, ERELU)
- Unsupervised Training of Neural Networks
- Restricted Boltzmann Machines
- Auto Encoders
- Deep Learning Applications

Week 5-6:

Module III - Deep Learning Networks:

- Historical context of Deep Learning
- Classes of Deep Learning Networks
- Deep Networks for Unsupervised learning
- Deep Networks for Supervised learning
- Hybrid Deep Networks

Week 7-8:

Module IV - CNN Architecture & Sequence Modelling:

- Architectural Overview and Motivation
- Layers, Filters, Parameter sharing
- Regularization
- Popular CNN Architectures (ResNet, AlexNet)
- Recurrent Neural Networks
- Bidirectional RNNs
- Encoder-decoder sequence to sequence architectures
- Long Short Term Memory Networks
- Deep Belief Networks
- Boltzmann Machines, Deep Boltzmann Machine, Generative Adversarial Networks

Week 9-10:

Module V - Practical Methodology and Application:

- Cross Validation, Feature Selection, Regularization
- Baseline Models, Selecting Hyperparameters
- Debugging Strategies
- Example: Multi-Digit Number Recognition

- Applications in Computer Vision, Speech Recognition, and Natural Language Processing

Total Hours: 45

Note: Ensure to refer to the textbooks and references mentioned for further understanding and practice.

End of Plan

Thank you for using Aura's Learning Plan Generator!