



Applied Deep Learning

“A complete guidance
to learn and build
AI Products and Solutions”

Duration : 3 days (6 sessions)

Delivery Mode : Classroom & Online (Live sessions)

Courses Created & conducted by

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Dr. Sridhar Swaminathan is the Founding Director of Research and Educate AI initiative at **MENMOZHI TECHNOLOGIES**, Bengaluru.

He is also an Assistant Professor in the Department of Computer Science Engineering, Bennett University, Greater Noida.

In the past, he worked as a Post-Doctoral Fellow in Bennett University and worked as a Research Officer in the Multimedia University, Malaysia. He has wide expertise in Computer Vision, Deep Learning, Machine Learning and Natural Language Processing.

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Day	Session	Topics to be covered
1	1	Theory: Introduction to AI and Deep Learning <ul style="list-style-type: none">• Motivation: Foundations and Terminology of Deep Learning• AI vs ML vs DL: A comparison• Features and Weights.• Machine Learning Recap: Linear Regression, Logistic Regression• Activation Functions• Neural Networks• Loss Functions• Gradient Descent• Feedforward and Backward Propagation• Deep Learning Model training Hands-on <ul style="list-style-type: none">• Building Neural Networks
1	2	Theory: Dataset, Regularization and Hyperparameter Tuning <ul style="list-style-type: none">• Dataset splitting and distribution.• Evaluation Metrics• Bias vs Variance• Regularization: L1/L2 regularization, Dropout, Early Stopping• Optimization methods

		<ul style="list-style-type: none"> • Hyperparameter Tuning Hands on <ul style="list-style-type: none"> • Tuning Neural Networks
2	1	Theory: Convolutional Neural Networks <ul style="list-style-type: none"> • ANN vs CNN • Convolution, pooling, padding, striding Hands on <ul style="list-style-type: none"> • Image Classification using CNN
2	2	Theory: Applications of Convolutional Neural Networks <ul style="list-style-type: none"> • Transfer Learning • Applications of CNN • Face recognition • Object detection • Face verification Hands on <ul style="list-style-type: none"> • Tuning CNN model and transfer learning
3	1	Theory: Recurrent Neural Networks <ul style="list-style-type: none"> • ANN vs RNN • Sequential Processing with RNN • Forward and Back Propagation • Language Models • LSTM and GRU Hands on <ul style="list-style-type: none"> • Text Classification using RNN
3	2	Theory: Applications of Recurrent Neural Networks <ul style="list-style-type: none"> • Sentiment Analysis • Chatbot • Translation • Speech Recognition Hands on Tuning RNN model