

ARTIFICIAL INTELLIGENCE MODULE 02

Advanced Artificial Intelligence

Arcitura®
CERTIFIED
Artificial Intelligence
Specialist

OVERVIEW

This course covers a series of practices for preparing and working with data for training and running contemporary AI systems and neural networks. It further provides techniques for designing and optimizing neural networks, including approaches for measuring and tuning neural network model performance. The practices and techniques are documented as design patterns that can be applied individually or in different combinations to address a range of common AI system problems and requirements. The patterns are further mapped to the learning approaches, functional areas and neural network types that were introduced in Module 1: Fundamental Artificial Intelligence.

The following primary topics are covered:

- Data Wrangling Patterns for Preparing Data for Neural Network Input
- Feature Encoding for Converting Categorical Features
- Feature Imputation for Inferring Feature Values
- Feature Scaling for Training Datasets with Broad Features
- Text Representation for Converting Data while Preserving Semantic and Syntactic Properties
- Dimensionality Reduction to Reduce Feature Space for Neural Network Input
- Supervised Learning Patterns for Training Neural Network Models
- Supervised Network Configuration for Establishing the Number of Neurons in Network Layers
- Image Identification for using a Convolutional Neural Network
- Sequence Identification for using a Long Short Term Memory Neural Network
- Unsupervised Learning Patterns for Training Neural Network Models
- Pattern Identification for Visually Identifying Patterns via a Self Organizing Map
- Content Filtering for Generating Recommendations
- Model Evaluation Patterns for Measuring Neural Network Performance
- Training Performance Evaluation for Assessing Neural Network Performance
- Prediction Performance Evaluation for Predicting Neural Network Performance in Production
- Baseline Modeling for Assessing and Comparing Complex Neural Networks
- Model Optimization Patterns for Refining and Adapting Neural Networks
- Overfitting Avoidance for Tuning a Neural Network
- Frequent Model Retraining for Keeping a Neural Network in Synch with Current Data
- Transfer Learning for Accelerating Neural Network Training

Duration: 1 Day

TRAINING + CERTIFICATION

This course is part of a training and accreditation program through which official certification can be achieved and for which official training and certification badges can be issued.



www.arcitura.com/ai

eLEARNING + PRINTED STUDY KITS

This Arcitura study kit includes the contents listed below. These course materials are available in full-color printed format, as well as in eLearning subscription format, via online access and offline file download.

- Workbook (2 of 3)
- Mind Map Poster
- Poster: Neural Networks and Design Patterns Mapping
- Poster: Problem Types and Design Patterns Mapping
- Poster: Practices and Design Patterns Mapping
- Flashcards
- Audio Tutor Recording



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ARTIFICIAL INTELLIGENCE

MODULE 02

Advanced Artificial Intelligence

	Certified DevOps Specialist	Certified Blockchain Architect	Certified IoT Architect	Certified Containerization Architect	Certified Machine Learning Specialist	Certified Artificial Intelligence Specialist
MODULE 01 Fundamental DevOps	●					
MODULE 02 DevOps in Practice	●					
MODULE 03 DevOps Lab	●					
MODULE 01 Fundamental Blockchain		●				
MODULE 02 Blockchain Technology & Architecture		●				
MODULE 03 Blockchain Technology & Architecture Lab		●				
MODULE 01 Fundamental IoT			●			
MODULE 02 IoT Technology & Architecture			●			
MODULE 03 IoT Technology & Architecture Lab			●			
MODULE 01 Fundamental Containerization				●		
MODULE 02 Containerization Technology & Architecture				●		
MODULE 03 Containerization Technology & Architecture Lab				●		
MODULE 01 Fundamental Machine Learning					●	
MODULE 02 Advanced Machine Learning					●	
MODULE 03 Machine Learning Lab					●	
MODULE 01 Fundamental Artificial Intelligence						●
MODULE 02 Advanced Artificial Intelligence						●
MODULE 03 Artificial Intelligence Lab						●