



Safety & Al



246€

The amounts mentioned include VAT at the normal rate in force.

The Foundation Level AI Testing qualification is aimed at anyone involved, or wants a basic understanding of in testing AI-based systems and/or AI for testing.

To be eligible to undertake the AI Testing certification exam, candidates must first hold the ISTQB® Foundation Certificate.

CONTENTS

Introduction to Al	Machine Learning (ML) - Overview
Definition of AI & AI Effect	Forms of ML
Narrow, General& Super Al	ML Workflow
Al-based & Conventional Systems	Selecting a Form of ML
Al Technologies	Factors Involved in ML Algorithm Selection
Al Development Frameworks	Overfitting & Underfitting
Hardware for AI-Based Systems	ML - Data
Al as a Service (AlaaS)	Data Preparation as Part of the ML Workflow
Pre-Trained Models	Training, Validation & Test Datasets in the ML Workflow
Standards, Regulations & Al	Dataset Quality Issues
Quality Characteristic for Al-Based Systems	Data Quality & Its Effect on the ML Model
Flexibility & Adaptability	Data Labelling for Supervised Learning
Autonomy	ML Functional Performance Metrics
Evolution	Confusion Matrix
Bias	Add ML Functional Performance Metrics for Classification, Regression & Clustering
Ethics	Limitations of ML Functional Performance Metrics
Side Effects & Reward Hacking	Selecting ML Functional Performance Metrics
Transparency, Interpretability & Explainability	Benchmark Suites for ML Performance



ISTQB® CTFL Al Testing







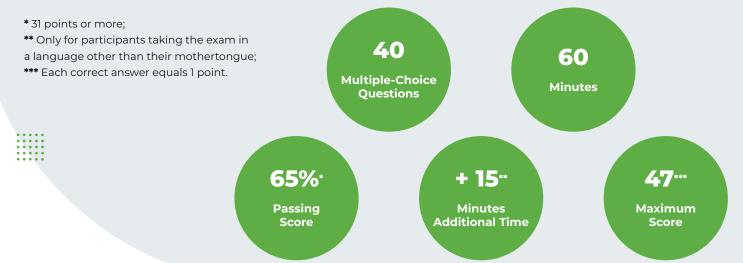
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CONTENTS

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ML Neural Networks & Testing	
Neural Networks	Methods & Techniques for the Testing of AI-Based System
Coverage Measures for Neural Networks	Adversarial Attacks & Data Poisoning
Testing Al-Based Systems Overview	Pairwise Testing
Specification of AI-Based Systems	A/B Testing
Test Levels for AI-Based Systems	Back-to-Back Testing
Test Data for Testing Al-Based Systems	Metamorphic Testing (MT)
Testing for Automation Bias in Al-Based Systems	Experience Based Testing of Al-Based Systems
Documentation an Al Component	Selecting Test Techniques for Al-Based System
Testing for Concept Drift	Test Environments for Al-Based Systems
Selecting a Test Approach for an ML System	Test Environments for AI-Based Systems
Testing AI-Specific Quality Characteristics	Virtual Test Environments for Testing Al-Based Systems
Challenges Testing Self-Learning Systems	Using Al for Testing
Testing Autonomous Self-Learning Systems	Al Technologies for Testing
Testing for Algorithmic, Sample & Inappropriate Bias	Using AI to Analyze Defect Reports
Challenges Testing Probabilistic & Non-Deterministic Al-Based Systems	Using AI for Test Case Generation
Challenges Testing Complex AI-Based Systems	Using AI for the Optimization of Regression Test Suites
Testing Transparency Interpretability & Explainbility of AI-Based Systems	Using Al for Defect Prediction
Test Oracles for Al-Based Systems	Using Al for Testing User Interfaces
Test Objectives & Acceptance Criteria	

EXAM STRUCTURE



BUSINESS OUTCOMES

- Understand the current state and expected trends of Al;
- Experience the implementation and testing of a ML model and recognize where testers can best influence its quality;
- Understand the challenges associated with testing AI-Based systems, such as their self-learning capabilities, bias, ethics, complexity, non-determinism, transparency and explainability;
- Contribute to the test strategy for an AI-Based system;
- Design and execute test cases for AI-based systems;
- Recognize the special requirements for the test infrastructure to support the testing of Al-based systems;
- Understand how AI can be used to support software testing.

For more information, please contact: exames@pstqb.pt











