



# ARTIFICIAL INTELLIGENCE EXPERT CERTIFICATE



CAIEC® Version 062021

**CertiProf**®

## Artificial Intelligence Professional Certificate CAIEC<sup>®</sup>

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## Introduction

AI is transforming many industries and changing the world. From effective web searches and speech recognition to self-driving cars, machine translation, natural language processing, and more.

Expand your knowledge in AI, Machine Learning and Deep Learning. Master the bases of neural networks architecture and the strengths of the many libraries and tools you will have at your disposal such as Python and TensorFlow among many others. Learn about the most effective machine learning techniques, and practice implementing them and getting them to work for yourself. Understand the capabilities, challenges, and consequences of deep learning and prepare you to participate in the development of leading-edge AI technology.

Take the definitive step in the world of AI, gain the knowledge and skills to level up your career.

## Learning Objectives

- Understand the fundamental keys of the deep learning approach
- Master the theoretical and practical bases of architecture and convergence of neural networks
- Depicting different existing fundamental architectures and mastering fundamental implementations
- Master the methodologies for setting up neural networks, the strengths and limitations of existing tools and libraries (pandas, numpy, scikit-learn)

## Exam Format and Duration

This study program has an exam in which the candidate must achieve a score to obtain the certification in Artificial Intelligence Expert Certificate CAIEC®

- Format: Multiple choice
- Questions: 40
- Language: English and spanish
- Pass Score: 32/40 or 80%
- Duration: 60 minutes
- Open book: No
- Delivery: This examination is available Online
- Supervised: it will be at the discretion of the Partner

## Eligibility for Certification

- Engineers, analysts, marketing managers
- Data Analysts, Data Scientists, Data Steward
- Anyone interested in Data Mining and Machine Learning techniques

## Content

### I. Deep Learning Fundamentals

- I.1 Representing Neural Networks
- I.2 Nonlinear Activation Functions
- I.3 Hidden Layers
- I.4 Guided Project: Building A Handwritten Digits Classifier

### II. Machine Learning Project

- II.1 Machine Learning Project Walkthrough: Data Cleaning
- II.2 Machine Learning Project Walkthrough: Preparing the Features
- II.3 Machine Learning Project Walkthrough: Making Predictions
- Key Points

### III. Kaggle Fundamentals

- Kaggle Fundamentals
- III.1 Getting Started with Kaggle
- III.2 Feature Preparation, Selection and Engineering
- III.3 Model Selection and Tuning
- III.4 Guided Project: Creating a Kaggle Workflow

### IV. TensorFlow Concepts

- IV.1 Presentation of TensorFlow
- IV.2 TensorFlow Basics
- IV.3 Classification of Neural Network in TensorFlow
- IV.4 Linear Regression in TensorFlow

### V. Keras Basis

- V. Keras Basis
- V.1 Kears Layers
- V.2 Deep Learning with Keras Implementation and Example
- V.3 Keras Vs Tensorflow – Difference Between Keras and Tensorflow
- VI. References