



# AI for Time Series Analysis and Forecasting (with TensorFlow and Keras)

Explore Applying AI Models to Time Series Processing and Forecasting Elements

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## Course Snapshot

- **Course:** AI for TimeSeries Analysis and Forecasting (TTML6643)
- **Duration:** 3 days
- **Audience & Skill-Level:** This **intermediate-level** course is for data team members already experienced with basic Python and data science.
- **Hands-on Learning:** This course is approximately **50% hands-on**, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Student machines are required.
- **Delivery Options:** This course is available for **onsite private classroom presentation, live online virtual presentation**, or can be presented in a **flexible blended learning format** for combined onsite and remote attendees. Please also ask about our **Self-Paced / Video** or **QuickSkills / Short Course** options.
- **Public Schedule:** This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please inquire for details.

## Overview

Geared for software architects and engineers, **AI for Time Series Analysis and Forecasting** is a three-day, hands-on course that addresses the need for smart software for time series analysis and forecasting.

## Course Outline

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We'll work with you to tune this course and level of coverage to target the skills you need most.

### Understanding Artificial Intelligence / AI Overview

- A brief history of AI
- Types of AI systems
- Training machine learning models
- Applying models for prediction

### Time series processing and forecasting elements

- Traditional Time Series forecasting with ARIMA models
- Defining Autocorrelation
- Understanding the Dickey-Fuller Test

### Forecasting with TensorFlow and Keras

- Google democratization of AI with TensorFlow
- Types of neural network (Perceptron, CNN, LSTM) and their use
- Forecasting with TensorFlow
- Using RNN and LSTM in time series prediction.
- Validation and metrics of Time Series Prediction models

**Need different skills or topics?** If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional python, data science, AI / machine learning and other related topics that may be blended with this course for a track that best suits your needs. Our team will collaborate with you to understand your needs and will target the course to focus on your specific learning objectives and goals.

## Audience & Pre-Requisites

This course is geared for experienced data analysts, developers, engineers or anyone tasked with utilizing AI with Time Series Analysis with Python. Attending students are required to have

- A background in basic Python development skills.
- Basic to Intermediate IT Skills Deep Learning for IoT.
- Good foundational mathematics or logic skill.
- Basic Linux skills, including familiarity with command-line options such as ls, cd, cp, and su

**Take Before:** Students should have attended or have incoming skills equivalent to those in the following course(s):

- TTPS4800 Introduction to Python Basics (3 days)
- TTPS4878 Hands-on Data Analysis with Pandas (2 days)

**Enhanced Learning Services:** Please also ask about our **Pre-Training Class OnRamp & Prep / Primer offerings, Skills Gap Assessment Services, Case Studies, Knowledge Check Quizzes, Skills Immersion Programs & Camps, Collaborative Mentoring Services and Extended Learning Support & Post Training services.**

**Course Materials:** Each student will receive a **Student Guide** with course notes, code samples, software tutorials, step-by-step written lab instructions, diagrams and related reference materials and links (as applicable). Students will also receive the project files (or code, if applicable) and solutions required for the hands-on work.

**Lab Setup Made Simple.** All course labs and solutions, data sets, Tableau course software (limited version, for course use only), detailed courseware, lab guides and resources (as applicable) are provided for attendees in our easy access, no installation required, remote lab environment for the duration of the course. Our tech team will help set up, test and verify lab access for each attendee prior to the course start date, ensuring a smooth start to class and successful hands-on course experience for all participants.

## For More Information

**Need dedicated training?** All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses, self-paced learning options, recorded sessions** and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training, Boot Camps, Skills Immersion Programs, Reskilling Programs, Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget. Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

**For more information** about our dedicated training services, collaborative mentoring services, courseware licensing options, courseware development services, public course schedule, training management services, partner and reseller programs, or to see our complete list of course offerings and special offers please visit us at [www.triveratech.com](http://www.triveratech.com), email [Info@triveratech.com](mailto:Info@triveratech.com) or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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