

AI for Finance

Course Summary

Description

AI is the new electricity. It will change the way we do everything. Financial institutions: banks, savings and loans, insurance, and mortgage companies, who are already well familiar from FinTech, are the first to derive benefit from AI. But every business can improve its money handling through AI. And the companies will soon discover that their use of AI is what allows it to bypass the competition and not be left behind.

The course is intended for financial specialists, FinTech users, software architects, and engineers. It gives the participants a practical level of experience, achieved through a combination of about 50% lecture, 50% demo work with student's participation.

Objectives

At the completion of this course, Students will be able to:

- Find the low-hanging fruit for AI in Finance
- Apply best practices for AI financial applications
- Build fraud resistance applications
- Use text input for financial decisions

Topics

- AI Overview
- AI for Structured Financial Data
- Understanding Text
- Fighting adversaries
- AI for Finance
- Fighting bias in financial decisions
- Real-world AI Implementations

Audience

This course is designed for Financial Professionals, FinTech Software Architects, and Developers.

Prerequisites

Interest in finance and familiarity with a programming language is a prerequisite for this course.

Duration

Three Days

AI for Finance

Course Outline

- I. **AI Overview**
 - A. A brief history of AI
 - B. Types of AI systems
 - C. Training machine learning models
 - D. Applying models for prediction
 - E. Demos and Labs

- II. **AI for Structured Financial Data**
 - A. Feature engineering
 - B. Data preparation
 - C. Standard machine learning
 - D. Advantages of deep learning with neural networks

- III. **Understanding Text**
 - A. Simple methods: NLTK, TextBlos
 - B. TF-IDF
 - C. More text analysis with Spacy
 - D. Text analysis revolution of 2018

- IV. **Fighting adversaries**
 - A. GAN - Generative Adversaries Networks
 - B. Learning from mistakes - reinforcement learning
 - C. Learning to balance
 - D. Learning to trade

- V. **AI for Finance**
 - A. Fairness (ch. Fighting bias)
 - B. Bias
 - C. Safety
 - D. Interpretability
 - E. Overcome regulatory hurdles

- VI. **Fighting bias in financial decisions**
 - A. Sources of unfairness in Machine Learning
 - B. Legal perspectives
 - C. Learning to be fair
 - D. Developing fair models

- VII. **Real-world AI Implementations**
 - A. Manage credit risk and reduce defaults
 - B. Use textual information to provide financial insights
 - C. Apply AI to personalized banking
 - D. Fraud prevention