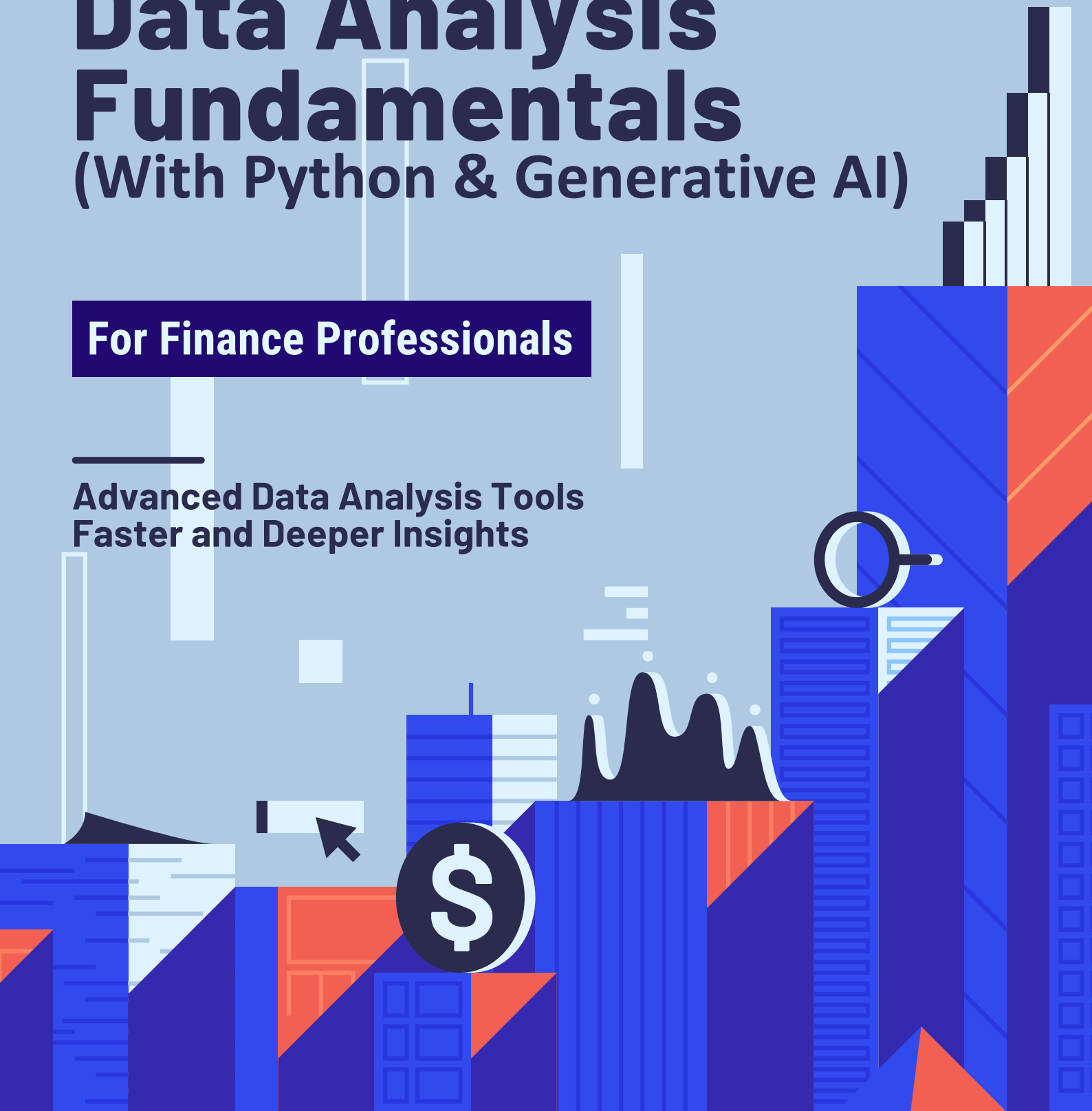
KAPLAN
FINANCIAL

Certificate in Data Analysis Fundamentals
(With Python & Generative AI)

For Finance Professionals

Advanced Data Analysis Tools
Faster and Deeper Insights



Kaplan

The Pioneer and Leader in Education

83+ Years Transforming Student's Lives

1M+ Students Worldwide

28+ Countries

10K+ Business Clients

1K+ Education Partners

Why Kaplan?

Our professional education programs in finance and accountancy are top-ranked in the U.S.,U.K., and Australia. Kaplan's substantial investment in learning science in all our programs underlines our emphasis on improving student outcomes and our focuses on educational performance and results.

Kaplan in Hong Kong is one of the largest educational institutions in terms of service scope as well as student population. Kaplan Hong Kong has more than 140 experienced professionals and dedicated staff, each committed to building futures, one success story at a time. We commit to combining years of classroom-based expertise with access to the most advanced learning platforms and technology.

Each year in Hong Kong, over 4,000 fresh grads, bankers and other professionals from the top banks, asset management firms, private equity firms and business schools have trusted us with their future. Let us help build the future that you deserve.

Why Python?

Python is a high-level, multipurpose programming language that is used in a wide range of domains and technical fields.

Python as a language—but much more so as an ecosystem—is an ideal technological framework for the financial industry. It is characterized by a number of benefits, like an elegant syntax, efficient development approaches, and usability for prototyping and production, among others. With its huge amount of available libraries and tools, Python seems to have answers to most questions raised by recent developments in the financial industry in terms of analytics, data volumes and frequency, compliance, and regulation, as well as technology itself. It has the potential to provide a single, powerful, consistent framework with which to streamline end-to-end development and production efforts even across larger financial institutions.

Advantages of Python

Efficiency

Python helps in getting results faster, in saving costs, and in saving time

Productivity

Python helps in getting more done with the same resources (people, assets, etc.)

Quality

Python allows us to do that we could not do with alternative technologies

Shorter Time-to-results

A field where the efficiency of Python becomes quite obvious is interactive data analytics. This is a field that benefits strongly from such powerful tools as Python and libraries like pandas.

Real Time

Financial analysts can—when applying the right Python tools and libraries, providing high-level abstraction—focus on their very domain and not on the technical intrinsicality. Analysts can react faster, providing valuable insights almost in real time and making sure they are one step ahead of the competition.

Ensuring High Performance

In general, it is accepted that Python has a rather concise syntax and that it is relatively efficient to code with. It can be highly performing in almost any application area.

Financial & Data Analysis

The discipline of applying software and technology in combination with (possibly advanced) algorithms and methods to gather, process, and analyze data in order to gain insights, to make decisions, or to fulfill regulatory requirements.

"Banks are essentially technology firms."

Hugo Banziger
Chief Risk Officer at Deutsche Bank

Banking has to work when and where you need it.

The best advice and the best service in financial services happens in real-time and is based on customer behavior, using principles of Big Data, mobility and gamification.

Brett King
CEO of Moven

In recent years, spurred by innovation and also regulations, banks and other financial institutions like hedge funds have evolved more and more into technology companies instead of being just financial intermediaries. Technology has become a major asset for almost any financial institution around the globe, having the potential to lead to competitive advantages as well as disadvantages.

Decisions often have to be made in milliseconds or even faster, making it necessary to build the respective analytics capabilities and to analyze large amounts of data in real-time.

There is one discipline that has seen a strong increase in importance in the finance industry: financial and data analytics. This phenomenon has a close relationship to the insight that speeds, frequencies, and data volumes increase at a rapid pace in the industry. In fact, real-time analytics can be considered the industry's answer to this trend.

The Future of Business Data

Whether you are in banking, risk management, portfolio management, or any other field of finance, your role either already requires or will soon require you to be able to program in at least one programming language. As the industry becomes more automated and technology driven, finance professionals with programming/technical skills are going to be more in demand and can help you stay relevant and competitive for the current job market.

The commercial potential of big data is clear, but there is a shortage of specialists with the skills to exploit it.

Course Structure

Subjects and topics include - 14 hours

Introduction to Python

Python for data analysis (For Finance)

Python pandas and visualization tools (For Finance)

Use of Generative AI Tools (For Finance)

Course overview:

The purpose of data analysis is to turn raw data into actionable insights. Much of the world's raw data, in particular with financial data, exists in collections of tables called relational databases. Thus, in order to be an efficient finance professional, you must know how to extract and clean data from these databases using a programming language called Python in different occasion like for the changing trend of stock market, comparison of a large amount of statistics and create complicated graph easily for more clear presentation.

Once you got the financial data you need, you would then use Python and various Python-related tools to harvest insights from your data to get a competitive edge, whether it is in creating data-driven financial models for business valuation, business analysis, risk management or simply create beautiful data visualizations to represent your financial data.

Unlike any other Data Analysis courses, this course focuses on Python and Generative AI tools (ChatGPT, Claude, Google Gemini, etc) specifically for finance professionals, helping you to be familiar with the most in demand tech skills in the 21st century and how you can apply these skills to your areas of expertise, whether it is portfolio analysis, financial trading, risk management or FinTech. You will learn the practical applications of the theoretical methodologies where you will blend technology and finance into construction of a model. This is a challenging course where you are expected to learn quickly.

Course Objectives:

- Extract and clean data in different occasion like for the changing trend of stock market
- Use Python for the comparison of a large amount of statistics and create complicated graphs easily for more clear presentation
- Learn how to AI technology and finance into construction of a model

Part 1: Introduction to Python and Generative AI (4 hours)

1. Introduction to Python
   - History and features of Python
   - Installing Python and setting up the development environment
   - Basic Python syntax and data types
   - Control structures (if-else, loops, etc.)
   - Functions, libraries and modules
2. Introduction to Generative AI
   - What is Generative AI?
   - Popular Generative AI models (ChatGPT, Claude, Google Gemini)
   - Applications of Generative AI in various domains
   - Ethical considerations of Generative AI
3. Integrating Python and Generative AI
   - Accessing Generative AI models through APIs
   - Fine-tuning Generative AI models for finance applications
   - Generating data, algorithms and models using Generative AI in Python

Part 2: Python for Data Analysis in Finance (4 hours)

1. Introduction to Financial Data Analysis
   - Types of financial data (stock prices, economic indicators, etc.)
   - Importance of data analysis in finance
2. NumPy for Numerical Operations
   - NumPy arrays and their properties
   - Performing mathematical and statistical operations on NumPy arrays
   - Handling missing data with NumPy
3. Pandas for Data Manipulation
   - Introducing Pandas data structures (Series and DataFrames)
   - Reading and writing data in various formats
   - Cleaning, transforming, and merging financial data using Pandas
4. Time Series Analysis with Pandas
   - Working with time-indexed data in Pandas
   - Handling missing data in time series
   - Performing time-based calculations and operations

Part 3: Data Visualization and Generative AI in Finance (4 hours)

1. Visualization with Matplotlib and Seaborn
   - Creating basic plots (line plots, scatter plots, histograms)
   - Customizing plot aesthetics and layout
   - Visualizing financial time series data
2. Advanced Visualizations for Finance
   - Candlestick charts for stock data
   - Heatmaps and correlation matrices
   - Dashboard creation with Matplotlib and Seaborn
3. Generative AI for Financial Reporting
   - Generating financial reports and summaries using AI tools
   - Creating custom visualizations and charts using Stable Diffusion
   - Automating the generation of financial presentations and documents
4. Generative AI for Investment Strategies
   - Generating synthetic financial data using Generative AI
   - Developing and evaluating trading strategies using Generative AI-generated data
   - Exploring the use of Generative AI for portfolio optimization and risk analysis

Part 4: Project and Wrap-up (2 hours)

1. Hands-on Project
   - Applying the skills learned throughout the course to a real-world financial problem
   - Leveraging Python, Pandas, Matplotlib, and Generative AI tools
2. Wrap-up and Q&A
   - Review of key concepts and learnings
   - Discussion of future trends and applications of Generative AI in finance
   - Final Q&A session

Who Should Attend?

- Finance professionals who want to make a move in their career from Finance to FinTech
- IT professionals from non-finance background
- IT professionals in banking industry who would like to enhance programming skills People
- from different industries who would like to switch their career to FinTech

Certificate

When you finish the course with 70% attendance and get a pass in the project, you will earn a Completion Certificate of the course. Please note that the project must be submitted in three weeks from the last lesson.

You will earn the Certificate of Attendance if you achieve 70% attendance without submitting the project.

Project

For the Data Analysis course, you will learn how to collect, clean and analyze a data set to solve a real-world problem. You will obtain a real-world data set, form a hypothesis about it, clean, parse, and apply modeling techniques and data analysis principles to ultimately create a predictive model using Python and Generative AI.

Students present their results and each write a report that includes the following:

1. Clearly articulated a financial problem statement
2. Summary of data acquisition, cleaning, and parsing stage
3. Clear presentation of your predictive model and the processes you took to create it
4. Presentation style appropriate to both technical and non technical audience alike

Trainer's Profile

Dr. Patrick Tsoi

- Doctor of Education, Hong Kong Baptist University
- Master in IT in Education, University of Hong Kong
- Bachelor of Engineering in System Engineering and Engineering Management, Chinese University of Hong Kong
- Microsoft Certified Professional
- Microsoft Global Partner (ID: 5464811)
- Trainer of Certified Data Professional in Open-source Software
- AWS Academy Educator
- Lecturer in Data Science and Computer Science

Dr. Tsoi has more than 25 years in the IT training field. Dr. Tsoi's work include complex projects applying data science, and software development to different aspect of value chains as well as participating with research teams, on fields such as Finance, Data Science, Quantitative Analysis and eLearning. He has extensive experience in designing and building computer vision solutions and real-time applications.

Dr. Tsoi is a certified trainer for Professional for Apache Projects (CPFA), authorized by Opencerthub, and is also a frequent visiting lecturer/trainer at different institutions.

Dr. Tsoi had previously trained consultants at a London-Listed Tech Consultancy Firm where the consultants worked in leading Institutions.

Expertise Area:
Data Science, Internet of Things, Natural Language Processing and Digital Signal Processing

DATA SCIENCE IS THE FUTURE

Let's prepare for it!

Hours
14 hours to complete

Course Format
Online Livestream

Date (2 days)
8 & 15 Dec, 2024 (Sun)

Teaching Language
English/ Cantonese

Time
10:00 - 13:00;
14:00 - 18:00

Course Fee
$4,900

What you need for the course
Laptop with charger and external mouse

Kaplan Financial (HK) Limited
G/F to 3/F, E-Tech Centre,
No. 402-406 Hennessy Road,
Wanchai, Hong Kong
(Causeway Bay MTR Exit A)

Tel: (852) 2526 3686 ı Email: hkfmkt@kaplan.com
Fax: (852) 2501 0589 ı www.kaplan.com.hk/kp

kfmhk kaplanhk_fm Kaplan Financial HK