

# KAPLAN QUANTITATIVE FINANCE CERTIFICATE

FINTECH BOOTCAMPS

For more information:  
[www.kaplan.com.hk/kp](http://www.kaplan.com.hk/kp)



# FINTECH

Fintech is an ambiguous term — everyone knows it stands for financial technology, but beyond that, there is no widespread consensus on what it actually means. Various products and services have been marketed as fintech, and even entire academic programmes have been crafted from this term. But expectations may differ from reality. This program bridges the gap between expectations and reality.

# WHY QUANTITATIVE FINANCE

Financial securities are becoming increasingly complex and demand has grown steadily for professionals who not only understand the complex mathematical models that price these securities, but who are able to enhance them to generate profits and reduce risk.

Because of the challenging nature of the work, which needs to blend mathematics, finance, and computer skills effectively, people who have mastered quantitative finance are in great demand and able to command very high salaries.



## WHO THE CERTIFICATE PROGRAM IS DESIGNED FOR

01

Undergraduates or Postgraduates

Relevant disciplines: *Engineering, Computer Science, Sciences, Business & Finance, Economics and Law*

02

Professionals working or planning to move to these areas:

Quantitative Analyst	Information Technology	Financial Engineer	Financial Analyst	Quantitative Trading	Capital Markets
Data Scientist	Computer Programming	Asset Management	Portfolio Manager	Quantitative Research	Fixed Income
Risk Manager	Hedge Funds	Fund Management	Product Manager	Modelling Analyst & Validation	Internal Audit
Consultant	Derivatives	Valuation	Financial Economics	Trading	Actuarial Analyst

## COURSES, PRACTICUM AND CERTIFICATION EXAM

Quantitative Finance is a multidisciplinary field drawing from finance and economics, mathematics, statistics, engineering and computational methods. There are three modules in this Kaplan Quantitative Finance Certificate Program, and each has a practicum component involving a capstone project with the Julia or other programming languages such as Python, MATLAB, C/C++ and Java. Each module ends with a certification exam.

### COURSE DETAILS

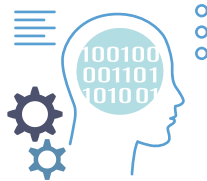
- Live Online Bootcamp
- Enroll by Module or all Modules
- 30-40 hours of interactive lectures per module
- Weekly project work per module in Capstone Project Phase
- Certification Exam in multiple choice and short questions format
- Taught in English

	Module 1 Security Pricing	Module 2 Portfolio Management	Module 3 Algorithmic Trading
	30 hours, 5 weeks	30 hours, 5 weeks	40 hours, 6 weeks
INTERACTIVE LECTURES	18,25 Jul & 1,8,15 Aug 2020 SAT	19,26 Sep & 1,3,10 Oct 2020 SAT + PUBLIC HOLIDAY	14,21,28 Nov & 5,12,19 Dec 2020 SAT
	9:30am – 12:30pm, 1:30pm- 4:30pm	9:30am – 12:30pm,1:30pm- 4:30pm	9:30am – 12:30pm,1:30pm- 5:10pm
INDIVIDUAL CAPSTONE PROJECT	30 hours, 5 weeks	30 hours, 5 weeks	40 hours, 6 weeks
	22,29 Aug, 5, 12 Sep & 2 OCT 2020 SAT + PUBLIC HOLIDAY	17, 24, 26, 31 Oct & 7 Nov 2020 SAT + PUBLIC HOLIDAY	2,9,16,23,30 Jan & 6 Feb 2021 SAT
	9:30am – 12:30pm, 1:30pm- 4:30pm	9:30am – 12:30pm,1:30pm- 4:30pm	9:30am – 12:30pm,1:30pm- 5:10pm
CERTIFICATION EXAM	2.5 hours 25 Oct 2020 SUN	2.5 hours 29 Nov 2020 SUN	2.5 hours 28 Feb 2021 SUN
	9:30am – 12:00pm	9:30am – 12:00pm	9:30am – 12:00pm
EARLY REGISTRATION DEADLINE	3 Jul 2020	8 Aug 2020	8 Aug 2020
FINAL REGISTRATION DEADLINE	13 Jul 2020	9 Sep 2020	4 Nov 2020

# KAPLAN QUANTITATIVE FINANCE CERTIFICATE

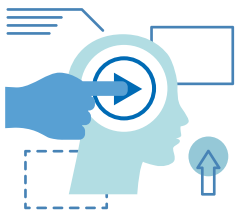
## Learn the fundamentals and industry applications

Unlike similar programs in the market, the Certificate Program teaches not only fundamentals, but also the latest cutting-edge techniques and technologies through sets of richly-interactive courses, instructed by certified trainers.



## Build a capstone project

The capstone project provides you with outcomes to show your current or potential employers. Apply and reinforce your knowledge by designing and implementing a theme relevant to the module. Due to the need for well-thought-out solutions in the module areas, Kaplan does not recommend half- or full-day hackathons, or contests that encourages hasty problem solving.



## Public Class or In-House Customized Trainings

This program can be run as in-house customized training, as a standalone program or integrated with your existing in-house programs. Talk to Kaplan and learn how we can bring expansive insight to your organization, teams and people.

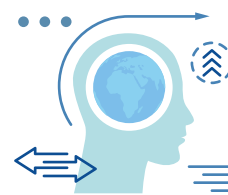
## Never miss a class

Absent participants have 2 weeks to catch up a missed Interactive Lecture session online.



## Learn from world-class quantitative finance experts

The program is designed and taught by ex-academics, who are PhDs from the top schools in the field. They have made a career in the industry with actual experience in the frontlines of finance world, and creators of up-and-coming technologies.



## Interact with trainers and participants in real-time

This program is truly live online, which means you can interact with the trainers and your fellow participants in real-time. Stay engaged by asking questions and participating in polls, conversations and exercises, and join your course online communication channel for additional support, communication and collaboration. You'll have a Trainer, an Assistant Trainer and a Course Moderator to support you throughout your learning process.







## Build your future-ready workforce with government subsidy

(subject to Authority's approval)

Upskilling and reskilling the workforce with digital mindsets, technical capabilities, and a growth culture is crucial to any company's success.

HKSAR Government's Reindustrialisation and Technology Training Programme (RTTP) subsidizes local companies on a 2:1 matching basis to train their staff in advanced technologies. The maximum annual funding is HK\$500,000 for each eligible company. Kaplan has submitted application for this program to register as a public course under the RTTP. Public course registration would be subject to RTTP's approval.



## Develop Your Investment Banking Skills

Want to apply for an investment banking internship/job? You sure would be judged on your financial skills. Make sure you sign up for this program and learn this most sought-after skill in the market.

## Attract and impress employers and investors

Your capstone project can be taken back to your current or potential employers. Recipients of the Award of Merit may showcase their projects at Kaplan's website.



## Mentoring and career support with the Award of Merit

Outstanding participant(s) will earn an Award of Merit and will gain access to mentoring services. Recipients not funded by their employers to take this program may be invited to exclusive internship, employment, or investment opportunities from Kaplan's network of partners, which may include government, academic, and corporate entities from all over the world. Past recipients go on to work at places like Goldman Sachs, Morgan Stanley, DBS Bank, Amazon and Microsoft.



## PROGRAM CURRICULUM

# Module 1

## Quantitative Finance: Security Pricing

The emphasis of this 6-week 30-hour “quant security pricing” (QSP) module will be on the use of stochastic models to price derivative securities in various asset classes including equities and fixed income. Particular attention will be paid to how banks use these tools in practice to price derivative products. Students who have completed this module will gain a solid understanding of the “rocket science” behind financial engineering, both in theory and practice.



### QSP 101

#### Introduction to Basic Fixed Income Securities

This week first introduces the fundamental concepts of present value and principle of no-arbitrage. Pricing of swaps, forward rate agreements and floating rate bonds will then be discussed using present value and no-arbitrage principle. Concepts of short rate, forward rate and discount factor and their relationship will then be introduced followed by swap curve construction using stripping of market instruments and interpolation.

### QSP 102

#### Introduction to Derivative Securities

This week first introduces the notions of derivatives such as futures and options. We will then discuss the mechanics of various vanilla option markets including equity options, foreign currency options, interest rate options and commodity options. We will then introduce the basic options trading strategies such as spread, straddle and butterfly spread and illustrates the motivation of the investors behind each trading strategies. Finally, we will introduce some of the more popular exotic equity and foreign currency derivatives that are traded in the market and the motivation of the investors who are buying such products.



**QSP 103****Option Pricing**

This week introduces the famous Black Scholes Equation of pricing vanilla option. Fischer Black, Myron Scholes and Robert Merton made a breakthrough in the pricing of stock options in early 1970's and Myron Scholes and Robert Merton were awarded the Nobel Prize in Economics in 1997 for this work. We will derive the Black Scholes Equation using the technique of replication. This technique turns to be more important than the equation itself and is the cornerstone of derivatives pricing. We will then introduce a very useful and very popular technique for pricing derivatives known as binomial trees using the technique of replication. Monte Carlos simulation, which is a popular technique to price path independent options will also be introduced. This week will continue with the introduction of Greeks such as delta, gamma and vega. These are the key parameters for derivative sellers to manage and hedge their market risks of transacting in derivatives.

**QSP 104****Pricing of Equity Options and Foreign Currency Equity Options**

This week will discuss how to price vanilla European and American equity and foreign currency options using Black Scholes and binomial tree. The volatility surface will then be introduced to illustrate the assumption of constant volatility is violated in the market. The week will end with discussion of pricing exotic equity and FX options using stochastic volatility model and dynamics and statics hedging of such exotics.

**QSP 105****Overview of Different Interest Rates Model and Pricing of Vanilla and Interest Rate Options**

We will first introduce a version of Hull-White model known as LGM (Liner Gauss Markov) of pricing caps and swaptions will then be introduced following by calibrating of interest rate.

**QSP 106****Pricing and Hedging of Exotic Interest Rate Options**

We will first introduce some of the more popular exotic interest rate derivatives that are traded in the market and the motivation of the investors who are buying such products. We will go through the pricing and hedging of one kind of interest rates exotics known as Bermudan swaptions with early termination in full detail using LGM model. We will use the swap curve and market prices of swaptions and caps to calibrate our LGM model. Which market instruments should be chosen for the calibration will also be discussed. The calibrated LGM model will then be used to build a binomial for pricing the Bermudan option. Finally we will use the bumping method to calculate the delta and vega for hedging followed by the trick of internal adjusters for constructing more stable hedges.

## PROGRAM CURRICULUM

# Module 2

## Quantitative Finance : Portfolio Management

In this 6-week 30-hour “quant portfolio management” (QPM) module, you will gain an understanding of the theory underlying optimal portfolio construction, the different ways portfolios are actually built in practice and how to measure and manage the risk of such portfolios. You will start by studying how imperfect correlation between assets leads to diversified and optimal

portfolios as well as the consequences in terms of asset pricing. Then, you will learn how to shape an investor's profile and build an adequate portfolio by combining strategic and tactical asset allocations. Finally, you will have a more in-depth look at risk: its different facets and the appropriate tools and techniques to measure it, manage it and hedge it.

**QPM 101****General Introduction and Key Concepts**

In this introductory week, you will first be presented with a few mistakes you will no longer make after following this course. In order to avoid making these mistakes, you will start by gaining a foundation and understanding of the three main types of information we need in order to build optimal portfolios: expected returns, risk and dependence.

**QPM 102****Modern Portfolio Theory and Beyond**

The focus of this section is on Modern Portfolio Theory. By understanding how imperfect correlations between asset returns can lead to superior risk-adjusted portfolio returns, we will soon be looking for ways to maximize the effect of diversification, which is at the heart of Modern Portfolio Theory. But we won't stop there: we will also explore the implications of Modern Portfolio Theory on real-world investment decisions and whether or not these implications are followed by investors. Finally, we will see how Modern Portfolio Theory can be built upon to derive the most popular asset pricing model: the Capital Asset Pricing Model.

**QPM 103****Asset Allocation**

This section is dedicated to asset allocation. We will introduce the Markowitz mean-variance asset allocation that is foundational to modern portfolio and then points that the challenges of implementing the mean-variance model in practice. Finally, we will examine the Black-Litterman Model developed at Goldman Sachs in 1990 that was designed to overcome problems that institutional investors have encountered in applying mean-variance model in practice.

**QPM 104****Risk Management**

We will start by looking in more depth at different sources of risk such as illiquidity and currency risk but also at the different tools available to investors to perform risk management. But how should we measure risk? We will see that it may be valuable to go a step beyond standard deviation, the risk measure we used so far, and look at the Value-at-Risk and Expected Shortfall which focus on potential large losses. Finally, we will use the financial instruments at our disposal to hedge market and currency risk.



## PROGRAM CURRICULUM

## Module 3

## Quantitative Finance : Algorithmic Trading Strategies

This 8-week 40-hour “quant algo trading” (QAT) module is for students to gain familiarity with the broad area of algorithmic trading strategies and learn about the underlying theory and mechanics behind the most common trading strategies. Students will also acquire an understanding of the mechanics of standard implementations of the single asset and portfolio based risk-premia trading strategies, recognize pros

and cons of various approaches to designing strategies and the common pitfalls encountered by algorithmic traders and be able to devise new and improved algorithmic strategies. Finally, students will learn about the statistical properties of strategies and discern the mathematically proven from the empirical so that they can acquire and improve methods to prevent overfitting.

**QAT 101****Introduction to Algorithmic Trading**

*Overview, Math Background, Trend Following, Mean-Reversion*

- Quant Trading – Definitions and Motivation
- Quant Trading as an Industry
- The Basics: Quick Overview of Background Mathematics/Statistics
- Emphasis on Modern Fitting Techniques, Methods of Solution, Properties of Solutions
- Fads, Fancies and Trends
- Momentum
- Impact on Design – Option Value vs Reactivity, Skewness and Sharpe
- Mean-Reversion Indecisive Markets?

**QAT 103****Ensemble Methods**

*How to combine different trading strategies for a trading model?*

- Motivation
- Bootstrap Aggregation
- Random Forest
- Boosting

**QAT 102****Mean Reversion**

*More Mean-Reversion: Pairs/RV trading, Carry and Value*

- Mean-Reversion Indecisive markets- Cont'd
- Pair Trading
- Statistical Arbitrage
- Catching Falling Knives
- When Trades Go Bad...
- Seeing Things More Simply
- Carry – When Things Stay the Same
- What Should It Really Be Worth?

**QAT 104****Snooping and Bad Science**

*Overfitting, Multiple testing, Covariance Penalties, Robustness and Rehash*

*Data Snooping, P-Hacking and Bad Science*

- Data Snooping
- P-hacking and Non-reproducible Results
- Standard Fixes – Train/Test/Holdout
- Multiple Testing Methods
- Backtest Statistics – Drawdown/ Shortfall
- Data Snooping and (Robust) Machine Learning
- Preventing Data-Snooping in Practice
- Summary

# COURSE DESIGNERS AND ASSOCIATES

Unlike other quantitative finance certification programs, the Kaplan Quantitative Finance Certificate teaches not only fundamentals but also how to apply the knowledge with the latest tools. It is designed and taught by ex-academics who have made a career in industry with actual experience in the frontlines of finance world, and creators of up-and-coming technologies.



## Dr. Lawrence Ma

*B.A. Math (Yale),  
M.S. Math (Stanford),  
Ph.D. Math (Cornell)*

Dr. Lawrence Ma has over 25 years of academics, technology development, and business experiences. He is currently the co-founder, CEO and chief scientist of eMALI IO Limited. eMALI is an incubatee of Hong Kong Science and Technology Park's Incu-Tech Program, specializes in developing blockchain and cryptographic applications in the Fintech and RegTech sector. Dr. Ma also serves as the President of Hong Kong Blockchain Society, Committee Member of China's Central University of Finance and Economics' Da Xin Blockchain Research Center Expert Committee Society. In recent years, Dr. Ma has been active in conducting training and seminars for regulators, governments, enterprises, finance professionals, EMBA students and investors in Hong Kong, Singapore, China, US and UK.

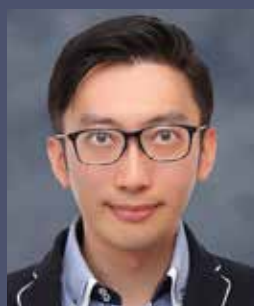
Dr. Ma's prior experiences include serving as a Lecturer in the Department of Mathematics at the National University of Singapore. He was the COO and executive director for Orbrich (China) International Factors, one of the first non-banking factors in China, where he managed the credit risks arising from Orbrich's factoring products. At Man Drapeau Research, he was the Head of Quantitative Research. As the Senior Consultant for Bain & Company, Dr. Ma was the Director of Financial Engineering for Bain's Bank of China Basel II Market Risk Internal Model projects.



## Dr. Alfred Ma

*B.Sc. Math (CUHK),  
M.Phil. Math (CUHK),  
Ph.D. Operations Research (Columbia)*

Dr. Alfred Ma is a Chartered Scientist and Chartered Mathematician with over 10 years of experience in quantitative finance. He started his career at Goldman Sachs in New York, and founded CASH Financial Services Group and Liberty Securities in Hong Kong. Dr. A. Ma is also an adjunct professor at the City University of Hong Kong and the Hang Seng University of Hong Kong.



## Dr. Prof. John Yuen

*B.Eng. Information Engineering (CUHK),  
M. Phil. Information Engineering (CUHK),  
Ph.D. (University of Wollongong)*

Dr John Yuen is an assistant professor in the Department of Computer Science at the University of Hong Kong. Before joining the University of Hong Kong, he was a senior researcher of Shield Lab at Huawei Singapore Research Centre. He was a member of the Cryptography Expert Group in Huawei. He received his Ph.D. degree from the University of Wollongong in 2010 and worked as a post-doctoral fellow in the University of Hong Kong before joining Huawei.



# COURSE ADVISORS



## Dr. Prof. S.C. Choi

*B.Sc. Math/Computational Science (Yale/NUS),  
M. Statistics/Applied Probability (NUS),  
Ph.D. Computational & Mathematical  
Engineering (Stanford)*

Sou-Cheng T. Choi is a big data & AI consultant. She is also a Research Associate Professor in the Department of Applied Mathematics, Illinois Institute of Technology (IIT) and a Principal Data Scientist with the Automotive Innovation and Life Innovation groups, Allstate Insurance Company, developing real-time risk models using advanced machine learning methods on big data pertaining to emerging technologies such as wearable sensors, semi-autonomous and self-driving cars. Previously, she was a Senior Statistician working on multiple scientific problems related to computational social sciences in the Department of Statistics and Methodology, NORC at the University of Chicago.

## Dr. Prof. Alan Edelman

*Professor of Applied Mathematics, MIT  
Parallel Computing, Numerical Linear Algebra,  
Random Matrices*

Alan Edelman is Professor of Applied Mathematics, and in 2004 founded Interactive Supercomputing (acquired by Microsoft). He received the B.S. & M.S. degrees in mathematics from Yale in 1984, and the Ph.D. in applied mathematics from MIT in 1989 under the direction of Lloyd N. Trefethen. Following a year at Thinking Machines Corp and at CERFACS in France, Edelman went to U.C. Berkeley as a Morrey Assistant Professor and Lewy Fellow, 1990-93. He joined the MIT faculty in applied mathematics in 1993. Edelman's research interests include high performance computing, numerical computation, linear algebra and stochastic eigenanalysis (random

matrix theory). He has consulted for Akamai, IBM, Pixar, and NKK Japan among other corporations. A Sloan fellow, Edelman received an NSF Faculty Career award in 1995. He has received numerous awards, among them the Gordon Bell Prize and Householder Prize (1990), the Chauvenet Prize (1998), the Edgerly Science Partnership Award (1999), the SIAM Activity Group on Linear Algebra Prize (2000), and the Lester R. Ford Award, (2005). In 2011, Edelman was selected a Fellow of SIAM, "for his contributions in bringing together mathematics and industry in the areas of numerical linear algebra, random matrix theory, and parallel computing." Edelman was named a 2018 Fellow of the IEEE for his "contributions to the development of technical-computing languages," namely the Julia language for numerical/scientific computing. In 2019, Alan was also honored with the Sidney Fernbach Award of the IEEE.

## OUTSTANDING ALUMNI

### PIERRE ANDURAND

*CIO, Andurand Capital*



Pierre is one of the world's most renowned oil and energy traders. In 2008, Forbes placed him in its list of the top 20 highest-earning hedge-fund managers. Recently Forbes reported his hedge funds being one of the pandemic winners, making over 1 billion USD in the first 3 months for 2020.

### DR. SRIKANT MARAKANI

*Former Assistant Professor,  
City University of Hong Kong*



Dr Marakani previous research includes the study of consumption based asset pricing models, long run risk models and firm lifecycle theory. Prior to this, he obtained a master's degree in physics at the University of Chicago where he held the prestigious Subrahmanyam Chandrasekhar fellowship.

## PAST PROJECTS

### 1 PRICING OF FIXED INCOME DERIVATIVES USING HULL-WHITE MODEL

In quantitative finance, the Hull-White model is a model of future short interest rates. The model is still popular in the market today and is still used by some banks to price the exotic interest rate derivatives. In this project, the student implements a version of Hull-White model using trinomial trees that is calibrated to the initial term structure of interest rate (using swap curve) and a given term structure of volatilities (using market cap prices). The calibrated model is then used to price path dependent interest rate derivatives such as Bermudan swaption with early termination and calculate delta and vega for hedging purpose by using bumping.

### 2 PRICING RANGE ACCRUAL NOTES

Range accrual notes is one of the more popular exotic interest rate derivatives for institutional investors. In this project, the student prices a range accrual note by decomposing the note into a series of caplet's binary option with adjustment of date mismatch. Next, the student implements a version of Hull-White model to price callable range accrual note that is calibrated to the swap curve, cap volatilities curve and underlying range accrual. The delta and vega are computed using bumping.

### 3 MARKET ANALYSIS USING GENETIC ALGORITHM

Genetic Algorithms, which belong to the larger class of evolutionary algorithms, are commonly used to generate high-quality solutions to optimization and search problems by relying on biologically inspired operators such as mutation, crossover and selection. In this project, the student implements a version of genetic algorithm and applies it to the problem of stock selections in a portfolio using fundamental data and the problem of selecting the best combination values of parameters in a trading rule comprised of different technical indicators.

## COMPANIES WHERE PAST PARTICIPANTS WORK

Goldman  
Sachs

Morgan Stanley

UBS

DBS

CREDIT SUISSE

CITADEL

BNP PARIBAS

amazon

ORACLE

Microsoft



# PREREQUISITES

This program expects you to have some basic knowledge of Mathematics and Programming:

## MATHEMATICS

- Calculus: derivative, chain rule for derivative, Newton's method
- Probability: concept of random variable, expectation (mean), standard deviation, variance, covariance, normal distribution, multi-variate normal distribution, conditional expectation, martingale, Brownian Motion and Bayes' Theorem
- Statistics: co-integration

## PROGRAMMING (CAPSTONE PROJECT ONLY)

- Students are welcomed to use any programming language to do the assignment and implementing the Capstone Project such as Julia, Python, MATLAB, C/C++ and Java.

# NOT SURE WHETHER YOU MEET THE REQUIREMENTS?

## OPTIONAL ONLINE PRE-COURSE: MATHEMATICS FOR QUANTITATIVE FINANCE BOOTCAMP^

^Not eligible for RTP funding

If you were/are not major in computer science, math, statistics, engineering or other related field, and think that you may not have a sufficient background, we provide a 3-hour on-demand, self-paced online workshop (extra fees of \$800) to cover the mathematics and programming fundamentals required by the program. In order to gain admission into the program, you are required to pass the online entrance exam at the end of the workshop with a pass mark of 60%.

## COST

	EARLY REGISTRATION			REGULAR REGISTRATION	
	Early Registration Deadline	Interactive Lectures only	With Capstone Project + Cert Exam <sup>#</sup>	Interactive Lectures only	With Capstone Project + Cert Exam <sup>#</sup>
<b>Module 1</b> Security Pricing (QSP)	3 Jul 2020	\$10,000	\$20,000	\$12,500	\$25,000
<b>Module 2</b> Portfolio Management (QPM)	8 Aug 2020	\$10,000	\$20,000	\$12,500	\$25,000
<b>Module 3</b> Algorithmic Trading (QAT)	8 Aug 2020	\$13,000	\$26,000	\$16,500	\$33,000
<b>Package*</b> (incl all three modules)	3 Jul 2020	\$27,000	\$54,000	\$33,000	\$66,000

<sup>#</sup> Exam fee waived.

\* Participants pursuing the Kaplan Quantitative Finance Certificate must successfully complete all 3 modules within 18 months with 70% attendance, and obtain pass mark of 60% in all Capstone Projects as well as all Certification Exams.

### Kaplan Alumni Discount

Kaplan offers a HK\$500 discount on the effective price for each module (except online Pre-Course), if you are an alumnus in any of our Financial, Accounting, Professional, Higher Education and Test Prep & Admissions programs.

# THE JULIA LANGUAGE

Launched in 2012, Julia is an open-source language that combines the interactivity and syntax of 'scripting' languages, such as Python, Matlab and R, with the speed of 'compiled' languages such as Fortran and C/C++. Although Julia is currently not as popular as Python, there are some huge benefits to using Julia for Data Science that make it a better choice over Python in a lot of situations.

It fills the gap of large-scale technical computations: Usually, one would often find him/herself coding algorithms in one programming language such as Python or Matlab for quick prototyping, and only to have to rewrite them in a faster one say C++ libraries, which are necessary at a large scale. Now, one can use Julia instead of juggling with two languages.

In January 2019, Julia Computing won the Wilkinson Prize for Numerical Software, which awards outstanding contributions in the field. Siam News reported:

Julia allows researchers to write high-level code in an intuitive syntax

and produce code with the speed of production programming languages. It has been widely adopted by the scientific computing community for application areas that include astronomy, economics, deep learning, energy optimization, and medicine. In particular, the Federal Aviation Administration has chosen Julia as the language for the next generation airborne collision avoidance system.

Julia has already attracted some high-profile users in the finance and insurance sector, from investment manager BlackRock, which uses it for time-series analytics, to the British insurer Aviva, which uses it for risk calculations. In 2015, the Federal Reserve Bank of New York used Julia to make models of the US economy, noting that the language made model estimation "about 10 times faster" than its previous MATLAB implementation.

Given the performance issues that are fundamental in the architecture of Python, Julia is one of the leading candidates to replace Python and become the choice language for machine learning and data science.

## CERTIFICATE

When you finish each module with 70% attendance, and obtain a pass mark of 60% in both the capstone project and the certification exam, you will earn a certificate for that specialization:

- Kaplan Security Pricing Certificate
- Kaplan Portfolio Management Certificate
- Kaplan Algorithmic Trading Certificate

The **Kaplan Quantitative Finance Certificate** will be awarded upon successful earning all 3 specialization certificates within 18 months.

It's okay to complete just the Interactive Lectures, without both the capstone projects and certification exams. You will earn the **Certificate of Attendance** for that module if you achieve a 70% attendance.

All certificates will be issued by Kaplan in two formats: (1) paper, and (2) verifiable digital credential saved in the Kaplan Credentials Passport. They will be provided within 1 month from meeting the above criteria.

If you use the Julia Language in the capstone project, your certificate will also be endorsed and recognized by Julia Computing.

## KAPLAN CREDENTIALS PASSPORT

Kaplan Credentials Passport will help you collect certificates for attendance, assessment scores, completion status and more. Anyone checking these digital certificates can be assured that they are genuinely issued by Kaplan, thanks to the underlying blockchain-based verifiable credential system that is private-by-design in accordance to the principles of EU GDPR.



# FAQ

## Q1 *I am the recipient of the Award of Merit and I self-fund this program. Will I be guaranteed a job at the end?*

No, a job is not guaranteed. However, we do guarantee to:

- Work insanely hard to provide you with great learning experience;
- Introduce you to companies and hiring partners who are looking to hire data quantitative finance professionals;
- Provide post-session support; and
- Introduce you to any part-time opportunities while you do your job search.

## Q2 *Do you provide any tuition assistance?*

We want you to be able to focus on getting into class, not costs. We offer a range of financing and payment options to make your path to success easy:

- **Credit card Installment:** Our credit card installment payment option let you pay monthly fee for 6 or 12 months, with zero interest. Please call Kaplan at +852 25263686 to check your HSBC Visa/Mastercard or Amex Card eligibility, and schedule your payment in person.
- **Early registration discount:** Take up to \$12,000 off your tuition if you pay before the early bird deadline
- **Kaplan alumni discount:** Our commitment to your lifelong learning success
- **Employer reimbursement:** Share the course curriculum with your HR department to see if your company can cover some or all of your tuition
- The **Reindustrialisation and Technology Training Programme (RTTP)** subsidizes local companies on a 2:1 matching basis to train their staff in advanced technologies. The maximum annual funding is HK\$500,000 for each eligible company. Kaplan has submitted application for this program to register as a public course under the RTTP. Public course registration would be subject to RTTP's approval. Please check with your HR department and Kaplan for details.

## Q3 *Is there any admission process?*

Kaplan will review your enrollment form and determine your preparedness to succeed in our bootcamp. If you enroll our online pre-course, we will assess you based on your results in the entrance exam at the end of the pre-course. If you do not need the pre-course, we will assess you based on your (1) programming experience, (2) mathematics & statistics experience, and (3) potential overall fit within Kaplan. If Kaplan believes that you have low chance of success in the program, you will be informed in writing of your decline of acceptance within 10 days of enrollment. Full refund (excluding the tuition fee of the online pre-course) will be arranged within one month of the notification.

## Q4 *Is it more important to have a background in computer programming or mathematics/statistics?*

Some experience in both programming and mathematics/statistics are necessary. Further background in either one is helpful but not critical for overall success in this bootcamp.

## Q5 *What do I need to bring to the bootcamp?*

You will need your computer (PC/Mac) with at least 8 GB of RAM and a dual core processor (64 bit), a reliable internet connection, and a readiness to learn. Please also have your Github account ready for Capstone Projects.

## Q6 *Does Kaplan offer this program in on-demand online format?*

We currently offer the program in a Live Online format only. You will interact with trainers, Assistant Trainer and fellow participants in real time in a virtual classroom (Zoom or other alternatives) and connect with them outside the classroom in a dedicated Slack channel. Please check these platforms' system requirements. Two weeks will be provided to view the recording of a particular absent class session, via Kaplan's eLearning platform.

## Q7 *What are the benefits of taking a course in a Live Online format?*

The beauty of the Live Online format is that you are taught by our industry-leading trainers live, but can attend class sessions from literally anywhere you have an internet connection. Because you are on a set schedule, you'll be motivated to actually attend, do the work, and learn the material (which is what you are really here for anyway!).

## Q8 *Can you tell me more about the Capstone Project?*

- **Due date:** The capstone project must be completed 1 month after the certification exam.
- **Topic:** By the end of week 1 of the Capstone Project phase, you will either choose from a list of projects given by the trainer, or submit a project proposal of your own topic. If your proposal is not accepted, you will get one more week to revise the proposal. If the proposal is not accepted after this extra week, you will be required to pick a topic from the given list.

## Terms and Conditions

Terms and Conditions are subject to change without notice. Please review the full and most updated version from our website [www.kaplan.com.hk/kp](http://www.kaplan.com.hk/kp) periodically. All matters and disputes will be subject to the final decision of Kaplan.

### Enrollment Policy

1. A completed enrollment form must be accompanied by payment in full. Seats will not be reserved until enrollment procedure is completed.
2. Kaplan strongly advises applicants to submit enrollment forms and make full payment as early as possible. This will enable Kaplan to process enrollments more quickly. Please note that there is a limit to the number of participants who can be accepted to each class.
3. Prices are subject to change and we reserve the right to charge additional amounts to reflect any pricing changes taking effect before commencement of each module.
4. Kaplan reserves the right to cancel a module if enrollment is insufficient and/or make alterations regarding trainers and class schedule should the circumstances so required. Kaplan is not responsible for any loss or damage under any circumstances.
5. After the enrollment is completed, we will acknowledge your enrollment by mailing you the official receipt in 3 working days. If you do not hear from us, please check with us at +852 2526 3686 or email to [hkfmkt@kaplan.com](mailto:hkfmkt@kaplan.com).
6. If Kaplan believes that an individual has low chance of success in the program, the individual will be informed by email of their decline of acceptance within 10 days of enrollment. Full refund will be arranged within one month of the notification. Kaplan assess individuals based on (1) programming experience, (2) mathematics & statistics experience, and (3) potential overall fit within Kaplan. The tuition fee of the online pre-course is not refundable.

### Attendance Policy

7. Attendance will be taken based on Course Moderator's observation of individual participant's presence and/or Kaplan's online attendance record.
8. Courses are not transferable between individuals. Under all circumstances, nobody except the registered participants can participate in the registered class sessions or gain access to student services. Kaplan does not accept substitutes, in whole or in part, to obtain services and attend classes. Regular attendance check will be conducted throughout the course without notice. Upon request, participants will be required to turn on their webcams for attendance validation purpose.
9. Live online delivery will be postponed when a local tropical cyclone signal no. 8 or above is in force in Hong Kong. If the signal is lowered between 7am and 11am, the morning session will be postponed, but the afternoon session will be conducted as scheduled. If the signal is lowered between 11am and 4pm, the afternoon session will be postponed and rescheduled.

### Cancellation Policy

10. 50% course fee is refundable at any time up to 2 weeks prior to the program commencement date. No refund is allowed thereafter.
11. Cancellations will be subject to an administrative fee of \$300 per module.
12. Funds received but not utilized or refunded in accordance with these Terms and Conditions will be forfeited to Kaplan.
13. Refund will only be arranged upon the receipt of all necessary documents and tuition fee paid will be refunded to the participant by cheque.
14. Any request for refund due to extenuating personal reasons will be considered and determined on a case by case basis, upon presentation of supporting documentation. The common extenuating reasons are illness, accident, pregnancy and bereavement.
15. The following reasons will not be grounds for refund: financial circumstances, change of work circumstances (i.e. job, location, working hours, obligations etc), difficulty level of course not suitable, dislike of trainer's presentation style, unattended sessions.

### Transfer Policy

16. Kaplan would only accept written request to transfer to another module of the same program within 6 months at any time up to 2 weeks prior to original program commencement. The request will be assessed and approved on a case-by-case basis, subject to conditions decided by Kaplan. Any approved transfer will be subjected to an administrative fee of \$300 per module. This fee is non-refundable and non-transferrable.

### Certificates

17. For subjects relevant to the individual's function and which may help to enhance the performance of their job functions would meet CPT (SFC) purpose. It is up to the employers or corporations to determine suitability of the course in meeting CPT requirement. Individuals are responsible for verifying with employers using course topics and schedule. Employers is responsible for keeping proper records for SFC's inspection upon request. For this live online program to be accepted by SFC as a CPT activity, the participant must achieve a passmark of 60% or above in the certification exams. Kaplan also requires the participant to achieve an attendance of 70% or above for the issuance of a Certificate of Attendance.
18. Within one month from the successful completion of a particular module and fulfillment of the requirements, eligible participants will receive the certificate(s), in both paper and verifiable digital credential format. \$50 will be charged for each re-issuance of paper certificate. Paper certificates will be sent by local mail.

### Re-issuance of official receipt

19. An administration fee of \$50 will be charged for each re-issuance of official receipt.

### Reindustrialisation and Technology Training Programme (RTTP)

20. At the time of registration, participants must make final decision on whether the applicant company (i.e. participants' sponsor) intends to apply for reimbursement of the tuition fee through the HKSAR Government's Reindustrialisation and Technology Training Programme (RTTP). Participants are responsible for indicating this on the enrollment form.
21. An applicant company is eligible to apply for the RTTP training grant for its employee(s) if: (1) it is registered in Hong Kong under the Business Registration Ordinance (Cap. 310); (2) it is a non-government and non-subservient organization; and (3) the employee nominated is a Hong Kong permanent resident with the necessary background / experience relevant to the advanced technology of this program.
22. Kaplan cannot guarantee the availability, applicant company's application approval and reimbursement of the training grant from the HKSAR Government. Applicant companies are responsible for checking the RTTP's guidance notes for all procedures and requirements. Kaplan suggests applicant companies to apply training grant through RTTP's online system. Details for the RTTP are available at <https://rttp.vtc.edu.hk>.
23. Kaplan is responsible for validating the registered employee(s) attendance in the live online class, as well as his/her fulfillment of the 70% attendance rate required by the RTTP.

- As requested by the RTTP, Kaplan shall keep records of attendance and take screenshots showing the registered employee(s)' face(s) in the live online class for RTTP's checking upon request.
24. Employee(s) who will leave the employment of the applicant company are not eligible for refund of any kind, regardless of time spent or remaining in the program.
25. Kaplan shall provide a completed Confirmation of Training Completion and Payment (Public Courses) (Form 4A) to the applicant company within one month after course completion, for reimbursement of training grant. By "completion of training", we refer to an attendance of no less than 70% of the training hours for the course, excluding weekly project work.
26. The applicant company is solely responsible for returning a completed Training Grant Claim Form (Local Courses) (Form 3A), together with Form 4A provided by Kaplan and other supporting documents (where necessary), to the RTTP Secretariat within two months after course completion.
27. Kaplan may collect personal information required to satisfy the statutory obligations to the RTTP Secretariat. Personal information provided by Kaplan to the RTTP Secretariat will be kept by the Secretariat in confidence and all personal data will be handled in accordance with the relevant provisions of the Personal Data (Privacy) Ordinance (Cap. 486). For details, refer to the RTTP's guidance notes of the training grant.

### Catch-Up Videos (available for Interactive Lectures only)

28. Kaplan does not warrant that the catch-up videos will be uninterrupted or error-free. All catch-up videos are provided on an "as is, as available" basis.
29. Attendance will not be counted for watching of a catch-up video for RTTP attendance counting purpose.
30. Catch-Up Videos cannot be copied or recorded. Video and audio recording are prohibited.
31. A catch-up video will be available approximately 4 working days after a particular class is over. There is a limited license to view the content until 2 weeks after the original date of a live online class session. Kaplan bears no responsibility to extend the access period, regardless of participant's actual viewing.

### Zoom (or Zoom alternatives), Slack and Kaplan eLearning Platform

32. Participants agree that they have satisfied the minimum system requirements set forth for Kaplan's online requirement. Participants must fully test the technology and ensure satisfactory viewing result before enrollment is processed. Check the system requirement of Kaplan eLearning Platform at [goo.gl/CZd8ZP](http://goo.gl/CZd8ZP).
33. All online resources are to be used for the registered participant's personal use and benefit. Shared use is prohibited. Participants must not share the username and password with anyone. Unauthorized use of the online resources may be subject to legal action.
34. Login details will be emailed to participants approximately 2 working days prior to the commencement of each module.

### Class Materials

35. Course materials, in digital or paper format, will be distributed during the progression of the program.
36. Course materials must be collected before the completion of the program.
37. Kaplan offers a one-time free delivery of course materials to a Hong Kong local address. Delivery will be arranged around 5 working days before the commencement of each module. Participants are responsible for assuring there is an authorized personnel to receive the materials at time of delivery. Kaplan will not re-ship class materials returned to us. Participants are welcome to collect in person by presenting their HKID cards or passport in Kaplan's record. If you cannot come in person, you may authorize your representative to collect the items on behalf of you. You may arrange own courier services as well.
38. Kaplan will deliver to most countries, subject to additional international shipping charges. Participants are responsible for any tax and custom duties that may apply. Please contact us for a quotation.

### Copyright Policy

39. All class materials and videos are for the sole use by registered participants only. All class materials and videos, in whole or in part, may not be reproduced, shared, rent, copied or transmitted in any format or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission from Kaplan. The unauthorized duplication of class materials and/or videos is a violation of global copyright laws.

### Feedback Mechanism

40. Kaplan encourages constructive feedback on all aspects about the quality of teaching and learning. Throughout the course, if participants are not satisfied about our course or services, they are advised to write to the Course Director with full descriptions and evidence. Kaplan will take reasonable and prompt action to try to resolve your concerns. Complaints that are lacking in substance and not made in good faith will not be taken.
41. A course evaluation will be administered at the end of each module.

### Code of Conduct

42. It is the responsibility of every participant to be aware of the Kaplan Hong Kong Code of Conduct's content as published in <http://www.kaplan.com.hk/code-of-conduct.php> and to abide by its provisions.

### Personal Data Protection

43. Your personal data is collected and used by Kaplan for processing your application of admission, and for registration, administrative, verification, research, statistical, direct marketing and certification purposes. We may also collect personal information required to satisfy legal, government and statutory obligations. Provision of personal data is necessary, and without your personal data, we may not be able to provide services you require. We may share and transfer participants' personal data with other members of the Kaplan group and/or authorized third parties providing services to Kaplan in relation to the above purposes and/or other prescribed purposes as allowed by law from time to time. In all such circumstances, data will be treated in strict confidence. Under the provisions of the Personal Data (Privacy) Ordinance, applicants have rights to request access to, and to request correction of, his or her personal data. Applicants wishing to amend his or her data should fill out the prescribed form, and submit to Kaplan. Applicants wishing to opt out from receiving Kaplan's promotional emails and updates should email us at [hkmarketing.kf@kaplan.com](mailto:hkmarketing.kf@kaplan.com) at any time.

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