

# Leading with Technology in Finance

A five-day executive education course



Learn from experienced industry speakers and top EPFL professors about the new technologies disrupting financial services and become an ambassador of innovation in your company.



**This program will introduce you to the different digital technologies that are impacting financial services, such as blockchain/distributed ledger technologies, machine learning or cloud computing. It will furthermore familiarize you with the methodologies and mindset needed to make the best use of new technologies in your organization.**

With a course adapted to a business audience, you will interact directly with world-class EPFL professors and gain a unique overview of these complex technologies. Experienced industry entrepreneurs will then illustrate how these technologies have been leveraged in their banks or FinTechs and what are the important factors to be considered, covering matters such as security aspects and applicable regulations.



**EPFL Campus**  
Lausanne



**CHF 4'900**  
per person



**5 days**  
attendance



**7 - 11 October**  
2024

But understanding technology is only one aspect of adapting to the new environment. Other aspects include having the right mindset as well as an understanding of how to effectively collaborate with the technology experts, whether in-house or external. Modern IT companies have accelerated growth by using radically different working methods than those that banks are traditionally used to. Experts from FinTech and banking will come to tell you how to adapt to these methods and bring the various stakeholders on board. Moreover, we will teach you how to think differently about client needs and how you can become an ambassador of change in your organization.

By the end of the five days you will have become a competent partner in expert discussions when assessing new technology or partnership opportunities, you will have mastered the jargon and you will have the confidence to successfully leverage new technologies in your organization!

**The courses will be taught by accomplished professors from EPFL with particular expertise in artificial intelligence, machine learning, blockchain and cryptography, deepfakes, computing trends or business models for technology. Industry speakers with a vast experience in implementing these technologies in the banking industry, will provide the practical knowledge to leverage this information in your organization.**

### **Academic lecturers**

**Prof. Touradj Ebrahimi** – is a professor at EPFL specialized in multimedia signal processing, with a strong interest in deepfake technology. He is also the executive chairman of RayShaper SA, a Swiss start-up company active in computational vision and its applications. He is the convener of the JPEG standardization committee.

**Prof. Andreas Fuster** – is a professor at the Swiss Finance Institute at EPFL and research fellow at the Center for Economic Policy Research. He conducts research in the area of financial intermediation, with a focus on FinTech and household credit markets.

**Prof. Co-Pierre Georg** – is a professor at the Ecole des Hautes Etudes Commerciales du Nord (EDHEC) Business School in France. He is also the Director of the Algorand-UCT Financial Innovation Hub, working on the acceleration of the university's research on blockchain and financial technology.

**Prof. Marc Gruber** – is a management scholar and researcher specialized in technology commercialization. He is a professor at EPFL and holds the chair of Entrepreneurship and Technology Commercialization at EPFL's College of Management of Technology.

**Prof. Louise Muhdi** – is a professor of innovation and strategy at IMD. She has a holistic understanding of business ecosystems, dynamics, drivers and challenges as well as customer, partner and stakeholder requirements and needs.

**Prof. Pierre Vanderghenst** – is a professor of electrical engineering and computer and communication sciences at EPFL. He is also the academic director of the Center for Intelligent Systems and was EPFL's vice-president of education from 2017 to 2021.

## Industry experts

**Mr. Baptiste Ancey** – is the head of innovation and digital transformation at Indosuez Wealth Management (Switzerland) after having spent nearly 9 years at ING where he led digital services and innovation initiatives.

**Mr. Pierre Bongard** – is the chairman of the supervisory board of Mirabaud SCA, member of the board of directors, chairman of the audit and risk committee of the Banque Cantonale de Neuchâtel (BCN) and managing partner of Wisebow Advisers LLC.

**Dr. Andrea Dunbar** – runs the Edge AI and vision group at the Swiss Center for Electronics and Microtechnology (CSEM), which brings the latest research results in computer vision, machine learning, data analytics and embedded programming into industry supporting the digitalization process. She is also a Professor or Practice at EPFL, IEEE reviewer and a board member for the Cantonal Bank of Neuchâtel (BCN).

**Mr. Lino Finini** – is the COO of Swissquote and part of the company for more than 20 years. He is also a member of the board at Swissqote Financial Services (Malta), as well as board member at Kazko2go AG and at the Groupement hospitalier de l'ouest lémanique (GHOL).

**Dr. Florent Garcin** – is the head of data and analytics at Pictet Asset Management. Prior to joining Pictet Asset Management, he was the co-founder of a start-up providing artificial intelligence solutions to the media industry. He holds a PhD in artificial intelligence from EPFL.

**Mr. Mike Hofmann** – has 15+ years' experience in the financial industry working for leading global financial organizations in Zurich, New York and Hong Kong. He is now head of sales and business development “bLink” open finance platform at SIX Swiss Exchange.

**Mr. Jérôme Kehrli** – is the CTO of Netguardians and has extensive experience in developing banking software. He is currently responsible for innovation and product development activities and is specialized in information system architecture design and artificial intelligence.

**Dr. Maxime Monod** – is the founder of Twist Lab, a fintech innovation lab supporting banks and startups in their fintech initiatives, with a special focus on Open Banking. Previously, he was Head of Innovation at BCV, co-founded a company in the payment industry and was CTO of two software development companies.

**Mr. Paul Such** – is the founder and director of the computer and network security company Hacknowledge. He is also a board member at Evoq and at the Cantonal Bank of Fribourg (BCF).

## Course outline and take-aways

5 days, 7 hours of lectures a day with breaks

Day 1	<b>WHY</b>	<b>Introduction</b>
Day 2 and 3	<b>WHAT</b>	<b>The technology and its applications</b>
Day 4 and 5	<b>HOW</b>	<b>The methodologies, mindset and impact</b>

By the end of this program, you will be able to:



Judge how traditional key institutions have adapted to the digital transformation of the financial services industry.



Feel comfortable discussing the technologies that have started disrupting the banking world in recent years.



Identify what machine learning can do with data available in your organization.



Classify the main crypto assets and their particularities.



Learn how the cloud can be used as an enabler for technology and how to ensure data remains protected and secured.



Experience the client-centric approach that has made many FinTech firms so successful.



Use the right technical jargon and buzzwords to increase your impact in the decision-making process.



Understand the regulatory landscape to exploit maximal innovation while respecting the law.



Know the tools to strengthen your leadership role and successfully implement new ideas in your institution.



Become an enabler of successful implementations by using modern processes.



Determine how your organization can build a systematic “entrepreneurial” capability by identifying technology-enabled growth opportunities.



Get a feeling of what technology has in store for the next decade and how a future banking world might look.

Day 1

## WHY

### **FinTech - shaping the future of the financial system**

This introductory lecture focuses on the big picture of how technology in finance has evolved and how this has affected financial services. We focus on the main technological innovations in recent years and on the different activities of traditional banks that have been challenged by new players. In particular, we discuss examples of the FinTech disruption playbook, changes in the demands from customers, and how banks can respond. Finally, the lecture provides an introduction to the concepts of Decentralized Finance, and discusses its potential and limitations.

### **Demystifying industry jargon**

Do you need a quick and transparent explanation of the buzzwords that you hear but for which you lack the deeper understanding to fully grasp the concepts that they uphold? Do you want to know what lies behind the software concepts (API, Cookie, SaaS, etc.), new technical words (Edge & Cloud computing, ML, AI, Blockchain, NFT, Big Data, Meta Data) and what these mean for the business of finance and regulation (Embedded finance, PSD2)? Learn the jargon to enable you to communicate on an equal level with your stakeholders. In this course our expert will demystify some of the tech jargon and shine a light on what it is and where it is used.



What is unique about our program is that it combines a thorough overview of the new technologies that everybody is talking about with hands-on discussion of the methodologies to implement them in financial institutions. It isn't just about knowing what blockchain or machine learning mean, but also how a bank could concretely benefit from such technologies.

– Andreas Fuster, Professor at the Swiss Finance Institute, EPFL

### **Deepfakes and fraud awareness**

Introduction to digital image forensics with particular emphasis on the use of artificial intelligence in concrete real-world examples. The course starts with an overview of how advanced imaging techniques are used today to alter documents, pictures, audio, images and videos for both creative and artistic purposes as well as maliciously intended practices such as forgery in insurance, banking, administration, propaganda, attacks on the dignity of persons and enterprises and their reputation and fake news. The course then continues with a description of solutions to counter such attacks, through the use of forgery detection and provenance techniques where the advantages and drawbacks of each are highlighted. The course ends with a look into emerging threats and potential solutions to counteract them.



## Day 2 and 3

### WHAT

#### **Technology at the service of finance**

EPFL professors explain the technological concepts behind different tools that are used in modern financial services. Practitioners will use their personal experience to illustrate the link between these top-notch technologies and how they have been successfully used in financial applications.

#### **Distributed ledger technologies and NFTs**

Understand the principles behind distributed ledger and blockchain technologies, how do they work, what are their technological complexities and what is making them popular and increasingly used in many applications? What new evolutions and future trends can you expect over the coming years. Learn about the implications of Non-Fungible Tokens (NFTs) and how they can impact our lives like the World Wide Web or social networks.

Explore the evolution from Bitcoins to Ethereum smart contracts and get to know the banking specific blockchains such as R3/Corda. What are the practical use cases for cryptocurrencies and what are the technological and legislative hurdles? How is the banking industry adapting to this new technology?

#### **Machine learning and artificial intelligence**

Explore the journey from data generation to machine learning (ML) with potential challenges, opportunities and threats. Familiarize yourself with the basic paradigms and methods of ML and learn how to turn large bodies of unstructured data and content into knowledge and insights. Understand the source of biases in ML training data and how to deal with them.

How to make sure ML projects add value in your organization, what are examples of successful implementations and which programs have proven to be more challenging than expected. Learn how to put in place processes such that the business can adopt ML and how to try different small projects and evaluate their potential fast.

#### **Cloud computing and cybersecurity**

In this course, cluster computers, grids and cloud-based computers are covered as well as the implications of the current “virtualization” trend. Learn how to set up your infrastructure in order to be compliant with local legislation and how to protect your data. Explore cyber attacks and improve cyber resilience to prevent damage in the future. Assess, analyze and model threats. Discover measures and technologies used to protect your networks and software. Understand the importance of user awareness and education in mitigating risks.

#### **Keeping regulation in mind**

Understand how regulators are also disrupted by the very rapid pace of digitalization and gain an overview of the regulatory framework governing the FinTech ecosystem. Recognize the key risks and opportunities associated with this change process and how regulators aim to ensure a level playing field with adequate risk management, protection and fair competition. What does the law require when handling cryptocurrencies, big data or machine learning algorithms? Learn about the main takeaways from the PSD2 and GDPR to understand open banking.

#### **How open banking and APIs are changing the financial industry**

Buzzwords such as “open banking”, “embedded finance”, or “banking-as-a-service” have become popular in recent years, supported by experts and leading institutions predicting significant impact on the financial services industry. But what do these terms actually mean and what are the benefits and impacts for customers, financial institutions and FinTechs? Going forward, any financial institution needs to consider “open banking” in its strategies. Hence, an understanding of these topics and the different implementation approaches across markets, especially the EU and Switzerland, becomes critical.

Day 4 and 5

## HOW

### Shaping your new business opportunities

Technology is a key driver of disruption – a fact that is more than evident in the financial service industry. Given that established players often struggle to embrace new technological advances and have difficulty in discovering new market opportunities arising from them, this session is dedicated to reframing the boundaries of financial service companies and creatively identifying new growth spaces that lie beyond established competitive turfs. Particular emphasis will be placed on the mindsets and capabilities required to figure out “Where to Play” and understand how innovative opportunities can be pursued in a more systematic manner. Part of the session will be held in a workshop style, with participants engaging in market opportunity discovery by using the Market Opportunity Navigator – a business tool already used by more than 50'000 companies worldwide and included as the 4<sup>th</sup> tool in the lean start-up toolset.

### Choosing your collaboration model and partner

When introducing new technologies, should you opt for an in-house solution, partner up, or rather buy an existing FinTech? We will cover how to assess different solutions and providers. What are the key points to be aware of when choosing your partner?

### Understanding modern methodologies

In this module we will dive deeper into the different governance principles adopted by modern, young IT companies – such as FinTechs – that allowed them to be successful within a short time. How can Spotify, Google, or WhatsApp be so successful with the roll-out of new projects and what are the tips and tricks you can use in your bank to make a (development) process more efficient? Concepts like agility, lean start-up, DevOps and scrum will be demystified in this course.





### Digital transformation: key steps to building empathy into your processes

To succeed at digital transformation today, leaders need to ensure customers get empathetic technology interactions. We need tech to “speak human”. In this session, we will discuss why a customer-centric mindset is crucial to success and why starting with the customer experience and then working backwards to the technology can help organizations capture opportunities in a digital world. Furthermore, you will learn about principles, processes and tools that you and your team can use to build customer empathy and drive customer-centric innovation in your organization.

### Change management during digital transformation process

Learn from a practitioner how they managed the roll-out of their digital strategy in practice and what different axes they addressed to steer their bank into the modern era. What are the takeaways, what worked and what failed?

This program is unique and valuable for the financial sector because, as far as I know, this is perhaps the only one that is adapted to a business audience willing to understand the technologies related to fintech and successfully leverage them in their organizations.

– Paul Such, CEO, Hacknowledge

### The future of technology for finance

In this last course, you will learn about the latest advances in technologies. We explore the world of quantum computing and explain concepts such as “quantum entanglement” as well as neuromorphic computing and discuss the future of computing and artificial intelligence to give you an appetite for what the technologies can still provide for the coming years.



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99%

The program provided me with new ideas and motivation to bring back to my workplace



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92%

The program provides practical insights on how I can leverage technology to increase the digital transformation of my organization



The course has given me a deeper understanding of how FinTechs operate and the complexity of software development, as well as how to apply agile methodologies to contribute more meaningfully to my organization's digital transformation effort.

– Laurent Gaillard, COO of Pictet Wealth Management



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93%

The program gives the latest information on technology and modern methodologies that can be applied in finance



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5.5/6

Average score of each individual lecturer and course

## Why attend a FinTech program at EPFL?

In recent years, many CEOs of large banks have made statements along the lines of “We are a technology firm with a banking license.” Yet, the reality in the financial services industry typically lags behind these statements. For instance, a 2021 study of Swiss banks<sup>1</sup> found that “the implementation of digitalization, i.e. the path from the strategic blueprint via project and line work to market-ready offerings and processes, is (still too) slow in many institutions. [...] The digital leadership culture and flexibilization of bank structures by means of cross-functional teams and agile organizational forms are still not very well developed.”

What better place to study FinTech and how your organization can benefit from it than EPFL, which combines world-leading technology expertise with deep knowledge of the management of innovation, finance and technological change. EPFL researchers are pushing the frontiers of knowledge in domains such as AI, blockchain, business models and innovation management that are of key relevance for the future of the financial services industry and by coming to EPFL you will not only gain an overview of the current state of the art, but also of future possibilities – helping your organization become future-proof.

Benefit also from spending 5 days at EPFL's exceptional campus :



### Make connections

Social events will be organized during the program, allowing participants to network after the courses



### Visit campus

Enhance this on-site course with a visit to the EPFL campus, which will give you a sense of the innovative work being developed at one of Europe's most vibrant technical universities.



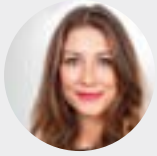
### Get inspired

By being immersed in EPFL, you'll understand how start-ups work and experience how many successful FinTechs started out.

<sup>1</sup> Source: Digital Pulse Check – Switzerland, Swiss Finance Institute and zeb, 2021



## What 2022 edition participants have said



**Morgane Lequand**

Head of Transformation - Corporate Banking  
Banque Cantonale Vaudoise

**I chose to participate in this program to update myself on the latest technologies and trends in the FinTech environment in Switzerland, to network with other banking players, and to benefit from concrete examples of implementation projects carried out by banking players and the feedback they received.** By taking this course, I was able to take the time to immerse myself in certain concepts and better understand their application.

This program met my expectations and gave me a better understanding of the challenges and evolution of the financial industry. It has also allowed me to develop a more open mind and no longer be impressed by references to certain buzzwords. The course is unique in its kind. To my knowledge, there is no other course on the European market that can be compared to this one in terms of content and approach. The format was ideal and facilitated networking. The atmosphere between the participants and the speakers was very good and stimulating.



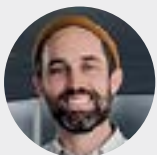
**Alastair Coull**

Senior Manager - Organisational and Talent development  
Pictet Academy

**This program opens horizons by exploring innovative solutions supporting higher productivity, better data intelligence, and providing ideas for new competitive opportunities within or beyond the companies' current sector.** The on-site location at EPFL was also very helpful in creating a stimulating environment for learning and creativity.

By customizing the EPFL FinTech program for Pictet's employees, it provides a safe environment for discussing sensitive and strategic topics. It encourages knowledge-sharing and collaboration, especially in large organizations where communication between departments can be a challenge.

Tailoring the program to the specific needs and goals of the organization gave the participants a more efficient and effective learning experience that directly contributes to the company's success.



**Gil Fontannaz**

Chief Product Officer  
Azqore

**I was very enthusiastic about participating in this course. Working in the field of FinTech, I have learned a lot on the job, but I was interested in sharing my experiences and learning more about the academic side of this field.** This course offers a great opportunity for networking with a diverse and experienced group of participants, including well-known banks, leaders in digital transformation.

To stay ahead of the needs of banks and our clients, we must navigate the constantly-evolving landscape of new FinTech companies, and assess the maturity and selling capabilities of these FinTechs, ensuring that our clients and banks do not get overwhelmed by working with too many of them at once. Our role is to help our clients make informed decisions about which fintechs to work with. This training reinforced that, in order to work with fintechs, it is necessary to have an agile organization not identical to FinTechs, but with a very good understanding of how they function. I realized that we have to adapt and transform our company to be more agile and product-oriented.

## Participant profile

As new technologies and their implementation lie at the core of the FinTech disruption, it is essential for all professionals in the industry to understand the opportunities they have available in their own organizations. This program is designed for middle and senior managers in the banking industry who are engaged with digital transformation projects, new technologies, or new technology partnerships.

Participants are typically from private and retail banks and hold functions such as business line experts, members of head office, project managers and sponsors, legal and compliance officers as well as bankers working with new tools or advising clients on new technology investments.

This overview course is ideal for professionals eager to learn, but often short on time. No prior technological knowledge is required.

## FAQ

### How much does the program cost?

The program costs CHF 4'900 per person including two networking drinks.

### Do I get a diploma at the end of the course?

Yes, you will receive a certificate of attendance from EPFL.

### What language will be spoken?

All lectures will be given in English.

### Is there a price reduction when a group of participants from the same organization register?

Yes, for more information please contact us at [executive@epfl.ch](mailto:executive@epfl.ch).

## About

The course is offered by the College of Management of Technology.

The organizing committee:

**Prof. A. Fuster** Academic director, professor of Finance

**Prof. M. Gruber** Academic director, professor of Entrepreneurship  
and Technology Commercialization

**Dr. K. Vervink** Program director



**Registration and information**

🌐 [go.epfl.ch/fintech](https://go.epfl.ch/fintech)

✉ [executive@epfl.ch](mailto:executive@epfl.ch)