FinTech - Disruptive Technologies and Current Trends

Mini-Semester: 7 / Year: 2022-3
151 - Bloomfield building
Thursday 18:00-22:00

Teaching Staff:
Instructor: Haim Pinto, pinto.haim@gmail.com
Office Hours: By appointment
TA's: [Name] [Office, e-mail, phone]
Office Hours: [scheduled + by appointment? Virtual Office Hours?]

Credits: 2 point

Study hours per week: 4 hours

Course/Module description:

The course will expose the students to the innovative disruptors that are changing the face of financial services globally. The course will tackle the multiple aspect of disruption, starting with the changes in human behavior and needs through the regulatory landscape and all the way to the technical innovation that is driving the new age of financial services. We will also discuss how Big-Tech is influencing financial services and why customers are starting to trust them to manage their money. Some of the topics will include a view into blockchain technology, Cryptocurrencies, Artificial intelligence Machine learning and more.

Course/Module aims:

Students will be acquiring tools to better understand the changing financial services sector and navigate through the different disruption trends that are shaping the new economy. We will focus on the technical aspects of the disruptive tends, analyzing the impact of distributed ledgers (such as blockchain) , Cryptocurrencies , ICO's (Initial Coin Offering), the influence of Artificial Intelligence (AI) , and the impact of the data revolution on the banking industry .

Learning outcomes - On successful completion of this module, students should be able to:

1. Define how fintech is changing the financial services landscape
2. understand blockchain basics
3. Understand the Bitcoin network, cryptocurrencies and associated financial instruments
4. Understand the shift in the role of legacy financial services firms
5. explain the new threats / opportunities in the global financial services market

Attendance requirements (%): 80%

Teaching arrangement and method of instruction: Frontal lectures, Virtual Lectures

Course/Module Content:

1. Introduction
    a. The rise of the fintech industry and how financial services were prime for disruption
    b. The Flavors of Fintech – the approach to technology driven disruption
    c. The blockchain promise- and the crypto industry - Decentralized financial platforms
2. Digital Transformation in financial services
    a. How did the digital industry influence financial services?
    b. How digital platforms are built to match the expectations of the digital crowd
    c. Digital Vs in person financial service
3. Innovation and change
    a. Driving change in highly regulated organizations
    b. Managing the balance between digitization and cyber defense and privacy regulation
    c. Implications of digitizing a service and automating processes to the end users
4. AI and machine learning in financial services
    a. Big Tech competition
    b. Privacy and Regulation
    c. Ethics in building autonomous systems – can a robot manage your financial life
5. Banking architecture
    a. Monolithic design Vs modern applications
    b. How did banks evolve their technology?
    c. The challenge of open banking – the reinvention of financial services
6. Cloud services in the financial services sector
    a. Transforming financial services through SaaS, PaaS, IaaS
    b. Omni Channel technology and the financial customer journey
7. The future of financial services
    a. Financial experience redefined
    b. AI driven economy
    c. Open and integrated financial ecosystems
    d. How will our lives change – open discussion

Course/Module evaluation:

Final project 80 %
Assignments 20%

References and Suggestions for Further Reading

Reading Materials	Source
IMF - Fintech and Financial Services: Initial Considerations	https://bit.ly/2MrYYMi
Bitcoin and Cryptocurrency Technologies (a.k.a. the "Princeton Bitcoin book") (2016)	https://bitcoinbook.cs.princeton.edu/
Unicredit: Blockchain Technology and Applications from a Financial Perspective Technical Report Version 1.0 Data & Analytics February 26, 2016	https://bit.ly/2PUm9AS
Provost, F., & Fawcett, T. (2013). Data Science for Business: What you need to know about data mining and data-analytic thinking. " O'Reilly Media, Inc.".	
"Introduction to Predictive Modeling: From Correlation to Supervised Segmentation", Provost and Fawcett, Data Science for Business, Chapter 3.	
"Overfitting and its Avoidance", Provost and Fawcett, Data Science for Business, Chapter 5.	
Provost and Fawcett, Data Science for Business, Chapter 8, Visualizing Model Performance	
Roger Stein: Your future financial adviser could be a robot - video from 2017	https://www.youtube.com/watch?v=ZwO7BfgrKLQ
1. Dhar, V. and Stein R. M. (2017) "Economic and Business Dimensions on FinTech Platforms and Strategy.", Communications of the ACM, 60, 10, October, pp. 32-35.	http://www.rogermstein.com/wp-content/uploads/p32-dhar.pdf
Satoshi Nakamoto, 2008, "Bitcoin: A Peer-to-Peer Electronic Cash System,"	https://bitcoin.org/bitcoin.pdf
Dhar, V. and R. M. Stein, (2017) "Your future financial adviser could be a robot. "(OpEd), MarketWatch: The Wall Street Journal Digital Network. March 13.	https://www.marketwatch.com/story/your-future-financial-adviser-could-be-a-robot-2017-03-13