summer school UTRECHT

FinTech
03.08.2020 - 07.08.2020
Course director: Dr. Guido Onenga

Monday, 03-08-20 Blockchain		
Time	**Activity**	**Description**
9.30 – 10:00		Welcome and Introduction
10:00-12:00	Discover the possibilities of Blockchain	• Your first blockchain transaction • Differences between Bitcoin, IOTA and SEPA • Explanation how blockchain can replace trusted third party (i.e. Banks) based on games
12:00-13:00	Lunchbreak	
14:00-17:00	Understanding the Blockshain Technology	• Transaction explanation. How can you benefit from low cost transaction recording? • Introduction ecosystems. Are you able to use the checks and balances of your origination in network? • Examples of eco-systems. How are organizations going to change if trust can be distributed? • How do you govern a network instead of an organization?

Tuesday, 04-08-20 Blockchain		
Time	**Activity**	**Description**
09:00-13:00	Impact and Future of Blockchain	• Impact of cryptocurrencies for economic traffic • Data visualization of capital distribution • The futures for cryptos / libra
13:00-14:00	Lunch	
14:00-17:00	Case studies	Not a quick overview but all the aspects of a working blockchain including, governance, legal and change management. Teacher's favorites: Tradelens from IBM and Self-sovereign identity

Wednesday, 05-08-20 Machine Learning		
Time	**Activity**	**Description**
10:00-12:00	Introduction to Machine Learning	- What is machine learning and how it different from programming / statistics /? - Data science vs machine learning vs AI - Types of machine learning (supervised / unsupervised) - Capabilities of a data scientist
12:00-13:00	Lunch	
14:00-17:00	Understanding Machine Learning	- CRISP-DM - Exploring the dataset - Basic statistics and the implicit hypothesis - Defining success criteria

Thursday, 06-08-20 Machine Learning		
Time	**Activity**	**Description**
10:00-12:00	Running algorithms against the data set	- Explanation of Logistic regression model, decision trees, random forests - Handson running and evaluating those models on the data - Picking a model as a final model
12:00-13:00	Lunch	
14:00-17:00	In-depth learning	- How to handle unbalanced datasets - How to handle unlabeled data and the role of the business experts - Inference and knowledge at runtime - What is deep learning and how does it relate to what we learned

Friday, 07-08-20 Presentations		
Time	**Activity**	**Description**
10:00-12:00	Presentations	
12:00-13:00	Lunch	
14.00-16.00	Presentations	

Course Summary

Financial technology, often shortened to FinTech, is an umbrella term for innovative technology in the financial sector. This summer course focuses on two disruptive technologies: blockchain and machine learning. Blockchain stimulates people to create ecosystems without a trusted third party and thus revolutionizes the way organizations work. Machine learning applications are increasingly developed. Examples in the financial sector

include the prediction of the stock market, fraud detection and chatbots. This summer course provides you both the theoretical foundations as well as hands-on experience. Overall, it will be a pleasant mix of understanding the technologies and discuss the new possibilities that it has to offer.

Learning outcomes
- What entails Blockchain and Machine Learning?
- What are opportunities and challenges of Blockchain and Machine Learning?
- How does Blockchain and Machine Learning technically work?
- What does the future hold for Blockchain and Machine Learning in the financial sector?