2021 | 2022

# EXECUTIVE MASTERS

- Machine Learning and Data Science
- Blockchain and Cybersecurity
- Cloud Computing

MOHAMMED VI POLYTECHNIC UNIVERSITY

UM6P-CS SCHOOL OF COMPUTER SCIENCE


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# About
# Mohammed VI Polytechnic University

Mohammed VI Polytechnic University is a research and innovation institution with the aim of being at the forefront of national and international education.

Following the highest educational standards, the University is committed to promoting excellence and expertise in prominent fields such as science and technology, humanities, economics and social sciences and that, for a sustainable economic development of Morocco and Africa.

Through a unique partnership approach and relevant, we established academic and executive programs, the University strives to consolidate Morocco's avant garde position in the fields of Science and Technology, Humanities and Economics for a better future for Africa. Located near Marrakesh, in the city of Benguerir and situated in the heart of Mohammed VI Green City, the University, while rooted locally, aspires to reach continental and international cluster.

# UM6P-CS
# School of Computer Science

The School of UM6P-Computer Science is a central component of Mohammed VI Polytechnic University.

The main goal of UM6P-CS is to build an unprecedented research-education program at an international level, in order to address Mohammed VI Polytechnic University and its ecosystem's challenges in terms of research and education, covering all aspects of computer science .

UM6P-CS has a strong expertise in Machine Learning, Cloud Computing, Data Science, Networking, Verification, Big Data, Blockchain, Privacy and Security.

# Presentation

The School of Computer Science at UM6P offers three Executive Masters: Machine Learning and Data Science, Blockchain and Cybersecurity, and Cloud Computing. The courses are given by international professors specialized in these domains. The Executive Masters will be given either in presence on the UM6P campus or on-line using on-line learning facilities.

This offer is dedicated to organisations looking to upskill their staff and professionals in order to develop new skills and advance their career. Our programs offer the opportunity to link multiple projects to a strategic or operational priority in your organization.

These programs are also offered on-line to individuals looking for the opportunity to develop their skills with the recent advances in Machine Learning, Data Science, Blockchain, Cybersecurity and Cloud Computing.

# Career Growth

These Executive Masters will equip students with the relevant knowledge and practices needed to put themselves and their respective organizations at the forefront of the digital revolution.

These programs are also an opportunity for students to become members of a large network of data scientists, data analysts, machine learning engineers, blockchain and security engineers, etc...

# Program Highlights

The courses are provided by first-class faculty and distinguished scholars from prestigious Universities in Europe and North American countries.

In a unique configuration to create a bridge between industry and research, and to create cross-over knowledge, the programs welcome both executives and Pre-Doctoral students. This provide an interaction between engineers from industry and those enrolled in the PhD program.

Through these interactions and exchange of professional skills and competencies, Executives, Master's and Doctoral students will learn, together, how to formulate and conceptualize the right solutions to problems they are facing on a daily basis.

# Programs Description

## Machine Learning and Data Science

Machine learning and data analysis algorithms are increasingly popular and widespread. They are used to solve different types of complex decision problems related to many important aspects of our modern life (finance, transportation, health, robots, smart cities, etc.). The objective of this master program is to provide a comprehensive introduction to the area of machine learning and data science, covering both the conceptual and the practical aspects. The courses of this master program are:

1. Programming tools for Data Science
2. Machine Learning & Recommender Systems
3. Machine Learning: Models and Algorithms
4. Deep Reinforcement Learning
5. Data Storage and Management

## Blockchain and Cybersecurity

The fast development of our digital society, based on a highly connected world and a massive use of cloud computing, raises a tremendous amount of challenging security issues (ensuring privacy, confidentiality, trust, detection and protection against attacks etc...). The objective of this master program is to provide a comprehensive introduction to these issues and to solutions allowing to tackle them. The courses of this master program are:

1. Virtualization and Cloud security
2. Cybersecurity (introduction to PenTest)
3. End-to-End Encryption for Real World
4. Security and Networking
5. Blockchain and Distributed Trust

## Cloud Computing

Cloud computing is a type of on demand sharing of Internet-based computer resources and data. Cloud Computing technology allows companies to outsource their IT functions enabling greater productivity, IT flexibility, performance and agility. This model of computing allows IT departments to focus on strategic initiatives and innovation rather than on infrastructure maintenance and support. The objective of this master is to provide a comprehensive introduction to the foundations of Cloud Computing. It covers both conceptual and practical aspects of cloud Computing while addressing virtualization and cloud security.

1. Systems Engineering
2. Concurrent Programming
3. Cloud Programming
4. Distributed Computing
5. Virtualization and Cloud Security

## Optional Courses

- Wireless Networks
- Cryptography
- Advanced Network Programming
- Numerical Optimisation

## Faculty

- Pr. **El Mehdi Amhoud** University Mohammed VI Polytechnic
- Mr. **Ilyas Ankouz** OCP Group
- Pr. **Yahya Benkaouz** Mohammed V University of Rabat
- Pr. **Ismail Berrada** University Mohammed VI Polytechnic
- Pr. **El Houcine Bergou** University Mohammed VI Polytechnic
- Pr. **El Mostapha Belmekki** INPT
- Pr. **Karima Echihabi** University Mohammed VI Polytechnic
- Pr. **Hajar El Hammouti** University Mohammed VI Polytechnic
- Pr **Pascal Felber** University of Neuchatel Switzerland
- Pr. **Mustapha Hedabou** University Mohammed VI Polytechnic
- Pr. **Youssef Iraqi** University Mohammed VI Polytechnic
- Pr. **Christoph Kirsch** University of Salzburg Austria
- Pr **Ahmed Khoumsi** Sherbrooke University Canada
- Pr. **Mohammed Amine Koulali** ENSAO
- Pr. **Alexandre Maurer** University Mohammed VI Polytechnic
- Pr. **Loubna Mekouar** University Mohammed VI Polytechnic
- Dr. **Tarik Moataz** Brown University USA
- Pr. **Guevara Noubir** Northeastern University USA
- Pr. **Gustavo Petri** ARM research United Kingdom

## Eligible Applicants

- Engineers and individuals holding a Master's degree in relevant fields
- Individuals holding a Master's degree, wishing to apply for a PhD program at Mohammed VI Polytechnic University.

## Application Requirements

- Background in Computer Science, Mathematics or Statistics
- B2/Upper Intermediate English proficiency level is needed to apply for the program

## Pedagogical Committee


Rachid GUERRAOUI


Mohammed ERRADI


Guevara NOUBIR


Ahmed BOUAJJANI

# Additional Information

**Duration:** 25 days (Discontinuous)
**Teaching mode:** Part-time
**Language:** English

**Training venue:** Mohammed VI Polytechnic University
Benguerir Campus
**Seats:** 24 participants
**Next cohort:** January 2022

# Certification Requirements

**At the end of the program, a certificate is awarded to the participant having:**

- Completed the modules of the program
- Validated the evaluations specific to each module

# Fees

**Corporate fees:**

- On Site: 100 000,00 Dhs HT (Tuition + Accommodation)
- On-line: 75 000,00 Dhs HT (Tuition only)

**Individuals fees:**

- On-line: 30 000,00 Dhs HT (Tuition only)

# For more Information

For any questions, please contact Mr Rachid EL GUERDAOUI:
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