CAS ETH in Data and Machine Learning

Providing managers with a targeted education in information technology, data science and machine learning to advance their career

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Certificate of Advanced Studies ETH in Data and Machine Learning

Target audience
Experienced managers working in technology-based industries with limited or no prior background in computer science. The target audience specifically includes managers from Finance, Marketing, Operations, Legal, Strategy and similar departments.

Objectives
The CAS ETH DML aims to improve the decision-making and collaboration skills of managers by providing them with fundamental training in IT, data science and machine learning (ML) that is applicable across multiple industries and areas of the organization.

Graduates will be able to communicate better and develop stronger relationships with IT, data science and AI staff. In turn, this will enable them to take on more challenging leadership roles in projects with significant IT, data science and AI components.

Modules
1. Introduction to Programming
This course provides a practical introduction to basic concepts and techniques for information processing in Python and SQL and their practical applications. Participants learn to develop mathematical models for real-world problems and solve them as small projects. Participants develop their programming skills through project-based work, online tutorials and individual (one-on-one) support during the entire CAS.

2. Information, Data and Computers
Fundamental computer science concepts are provided as preparation for later work in the CAS and MAS program. We will cover how information is managed as data, and how we use computers to process data and generate new insights. The goal is to provide a solid foundational understanding of how computers and data science enable today's information society. (Duration: 1 weekend)

3. Data Science and Machine Learning
This course covers the complete data processing pipeline and how to automate learning from data using common Deep Learning techniques. The goal is to explain the transformative nature of neural networks in enabling AI applications. The course is intended for managers and leaders who want to understand the typical workflow, fundamental techniques and key challenges of data science and machine learning to drive successful implementation. (Duration: 3 weekends)

4. AI and IT in Industry
Participants will explore how new information technologies such as machine learning and AI change different aspects of a business, and learn how to evaluate specific risks, costs, and benefits of such technologies. The module will shed light on success factors and common pitfalls when implementing new technologies and respective business changes, and it will specifically address the communication between technical experts and business management. (Duration: 3 weekends)

Structure and format
Four modules over 14 weeks with classes all day Friday and half day Saturday every other week, typically from September to December. Block format or blended learning. Workload is approximately 300 hours. 12 ECTS credits.

Admission requirements
A Master's level university degree recognised by ETH Zurich or equivalent educational background and several years of managerial experience. A good knowledge of English (B2) is required.

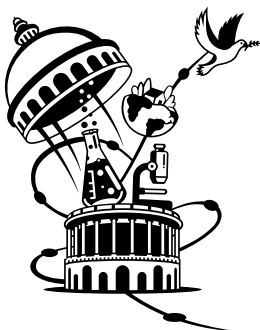|	
Start	Every September
Language	English
Application deadline	30 June 2024 (31 May in 2025)
Programme fee	CHF 8,500
Programme Director	Prof. Dr. Bernd Gärtner
Programme Manager	Maria Rosaria Polito politom@inf.ethz.ch Tel. +41 44 633 23 72

www.mas-aid.ethz.ch/cas/casdml.html

For more information,
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