

Introduction to AI Technology

Lecturers: Maria Chiara Debernardi, Andrea Giussani,
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Language

English

Course description and objectives

In this course we will explore the foundations of the Azure Cognitive Services and other related services to create an artificial intelligence solution. The Cognitive Services suite is a collection of pre-built cloud-based AI components that you can use without having to build your own machine learning models.

At the end of this course, each participant will be able to independently run modern machine learning pipelines in the Azure environment, as well as have a general understanding of the Azure Cognitive Services APIs, with a good feel about the legal aspects of AI implementations.

Audience

The course is targeted at third-year students of the Bachelor's Degree and at students of the Master's Degree Programs at Bocconi University, who want to:

- Learn the primary technological components of an AI strategy and their legal issues
- Get an understanding of Machine Learning methods
- Articulate how AI technology can solve business problems
- Create image-classification models backed by Artificial Intelligence that "learn" from labeled images you provide
- Build a chatbot with Azure

Prerequisites

The participant is expected to have a solid knowledge of Probability and Statistics. Having an exposure to Cloud Technology is a plus.

You are not required to have a strong background in programming, though it is highly recommended to have passed the Computer Science course (or equivalent) at Bocconi University, since some Python knowledge is needed during lesson 2.

Guidelines

Registration:

You can sign up for the course only through the yoU@B student Diary, in the "**sign-up for various activities**" box (please note that the box appears only when registrations open. Before then it will not be visible).

You can only cancel your registration by Diary **no later** than the registration deadline for the course itself. No other ways of cancellation are allowed.

Registration will be confirmed a few days before the start of the course through a message posted in the yoU@B student Diary.

Attendance:

- Attendance of **75% or more** of class hours: obtainment of the Open Badge
- Attendance of **less than 25%** of class hours: blacklisting

Duration

12 hours

Teaching mode

This course will be only taught in person. Online mode will not be provided.

Calendar

Lecture	Date	Time	Room
1	Fri 19/04/2024	14.45 – 16.15	InfoAS05
2	Fri 19/04/2024	16.30 – 18.00	InfoAS05
3	Mon 29/04/2024	18.15 – 19.45	InfoAS05
4	Thu 02/05/2024	18.15 – 19.45	InfoAS05
5	Mon 06/05/2024	18.15 – 19.45	InfoAS05
6	Thu 09/05/2024	18.15 – 19.45	InfoAS05

Syllabus of the course

Lecture	Topics
1	How to build a chatbot with Azure (Giussani) - Setting up an Azure Project

Lecture	Topics
	<ul style="list-style-type: none"> - Data storage - The QnA Maker Service - Building a Chatbot WebApp with Azure
2	Azure services for Sentiment Analysis (Giussani) <ul style="list-style-type: none"> - Azure Text Analytics API for Language Detection - Azure Text Analytics API for Sentiment Analysis
3	Image classification with Custom Vision (Debernardi) <ul style="list-style-type: none"> - Labelled image dataset creation - Model training - Evaluation of the model - Test with unknown data
4	Other Azure image services (Debernardi) <ul style="list-style-type: none"> - Computer Vision - OCR, Optical Character Recognition - Face: detection vs. recognition (hints)
5	Azure and Copilot (Debernardi) <ul style="list-style-type: none"> - LLM: large language models - What can or cannot you do with Copilot (and similar)? - Using Copilot inside Azure
6	Key legal aspects of AI implementation (Pedrazzini) <ul style="list-style-type: none"> - AI training: data protection and intellectual property rights - AI liability and legal personality - Legal risks with algorithm biases - AI's challenges to privacy, cybersecurity, copyright law and more

Software used

Microsoft Azure and Azure Cognitive Services

Suggested bibliography

Materials will be provided by the teachers and will be available on Blackboard.

Available seats

40 – third-year Bachelor's students

70 – Master students, SDA students, PhDs

Registrations cannot be carried out once this number has been reached or after closing of the registration period. Please remember that you can unsubscribe from ITEC courses only before the registration deadline.