esade

AI applications and insights for entrepreneurs

UGRA_016200

Departments	Dept. of Operations, Innovation & Data Sciences
Teaching Languages	English
ECTS	5
Teacher responsible	Yang Jiho - jiho.yang@esade.edu

Course Goals

By the end of this course, students will be able to:

1. Explain what AI is and how AI opens up new business opportunities
2. Describe how different AI models operate, including supervised/unsupervised machine learning, deep learning, neural networks, and Transformers.
3. Understand challenges in building and scaling AI-based ventures and learn frameworks that can help entrepreneurs to systematically use AI through the entrepreneurial journey
4. Gain knowledge about how to effectively leverage different AI-based tools to navigate through different steps of the entrepreneurial journey and to scale up quickly
5. Generate and develop new business ideas by applying machine learning and generative AI tools

Previous knowledge

Students are strongly advised to review basic programming with Python, including data types, data structure, file handling, and working with libraries. Students are also expected to have an understanding of basic concepts in statistics such as regressions and statistical inferences. Some knowledge on exploratory data analysis including data visualisation will be useful.

Prerequisits

Students are recommended to have taken the courses "Applied algorithmic thinking" and "Statistical intuitions and Applications".

Teaching methodology

1. Lectures: Conceptual frameworks to understand the implications of AI for work, business, and society
2. Hands-on Labs: Practical sessions to better understand machine learning tools using Python and to effectively leverage generative AI for various tasks
3. Case Studies: In-class discussion on real-world examples of new ventures leveraging AI to provide novel value propositions to better understand unique opportunities and challenges for entrepreneurs who want to build their own businesses based on AI technologies.
4. Group projects: Application of AI tools and techniques to real-world data to generate and develop new venture ideas
5. Individual assignment: Application of conceptual frameworks and knowledge on AI tools to evaluate strengths and weaknesses of an AI-based venture and propose how it can effectively compete with existing firms and scale up

Description

Course contribution to program

This course aims to cultivate aspiring entrepreneurs who can develop business ideas using AI-based tools and design their businesses around AI-based business models.

Students will:

1. learn theoretical frameworks for understanding the implications of AI for economic activities
2. discuss case studies on new ventures leveraging AI-based business models
3. understand how AI can help founding a new business through hands-on practices for using AI tools in different steps of the entrepreneurial journey
4. apply conceptual framework and knowledge learned in class to real-world start-ups to propose strategies for gaining competitive advantage and scaling up, and
5. work in groups to apply AI-based tools to come up with and develop promising new business ideas.

Bibliography

Agrawal, A., Gans, J., & Goldfarb, A., Prediction Machines: The Simple Economics of Artificial Intelligence, Harvard Business Review Press (Book)

Mollick, E., Co-Intelligence: Living and Working with AI, WH Allen (Book)

Iansiti, M., & Lackhani, K. R., Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World, Harvard Business Review Press (Book)

Agrawal, A., Gans, J., & Goldfarb, A., Power and Prediction: The Disruptive Economics of Artificial Intelligence, Harvard Business Review Press (Book)

Daugherty, P. R., & Wilson, H. J., Human + Machine: Reimagining Work in the Age of AI, Harvard Business Review Press (Book)

Brynjolfsson, E., & McAfee, A., The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies, W. W. Norton (Book)

Wooldridge, M., The Road to Conscious Machines: The Story of AI, Pelican (Book)

Activities

In-class discussions and debates
In-class discussion based on (but not limited to) case studies on startups built around AI-based business models to better understand opportunities and challenges that these ventures face in terms of competition, scaling-up, resources acquisition, etc.

Written and/or oral exams
A final exam will take place at the end of the term where students will apply concepts and frameworks they learned during the sessions.

Group presentations
Students will work in groups where they will have the opportunity to apply AI-based tools to come up with and develop new business ideas

Readings
Students are required to come to class prepared, having read all the required readings including case studies and academic articles.

Essays
Students will individually choose a start-up of their interest and analyze how it uses AI to create novel value propositions and which strategic challenges it faces, and how they can maximize their competitive advantage based on AI.

Case study analyses
Students will be required to read case studies on new ventures adopting AI-based business models and analyze how AI is used in these organizations, whether and how the deployment of AI can be improved, what kinds of challenges the organizations face, etc

Content

#	Topic
1	Introduction to AI & Implications for entrepreneurship
2	Working with AI
3	Building an AI-based venture (2 sessions)
4	Data analytics for generating business insights using Python (2 sessions)
5	Machine learning using Python (2 sessions)
6	Cloud computing tools for scaling up businesses
7	Generative AI for developing new business ideas (2 sessions)
8	AI risks, ethics, and governance

Assessment

Tool	Assessment tool	Category	Weight %
In-class analysis and discussion of issues	Students are expected to actively participate in in-class activities including case discussions and hands-on practices. In order to do so, students must come to each session prepared, having read assigned readings and having followed instructions for pre-	Ordinary round	20.00%
Individual or team exercises	Each student will choose a real-world AI venture and submit a report on its strengths and weaknesses and strategies to successfully compete and scale up.	Ordinary round	15.00%
Group project	Students will work in groups to apply AI tools to come up with and develop new business ideas. Presentation and report will each account for 15% of final marks.	Ordinary round	30.00%
Written and/or oral exams		Ordinary round	35.00%
Written and/or oral exams	Students who fail to pass the course will be required to sit a retake exam that accounts for the 50% of their final course grade.	Retake	50.00%

PROGRAMS

BITLASI22-Bachelor in Transformational Leadership and Social Impact (Undergraduates: Business)
BITLASI22 Year 4 (Optative)