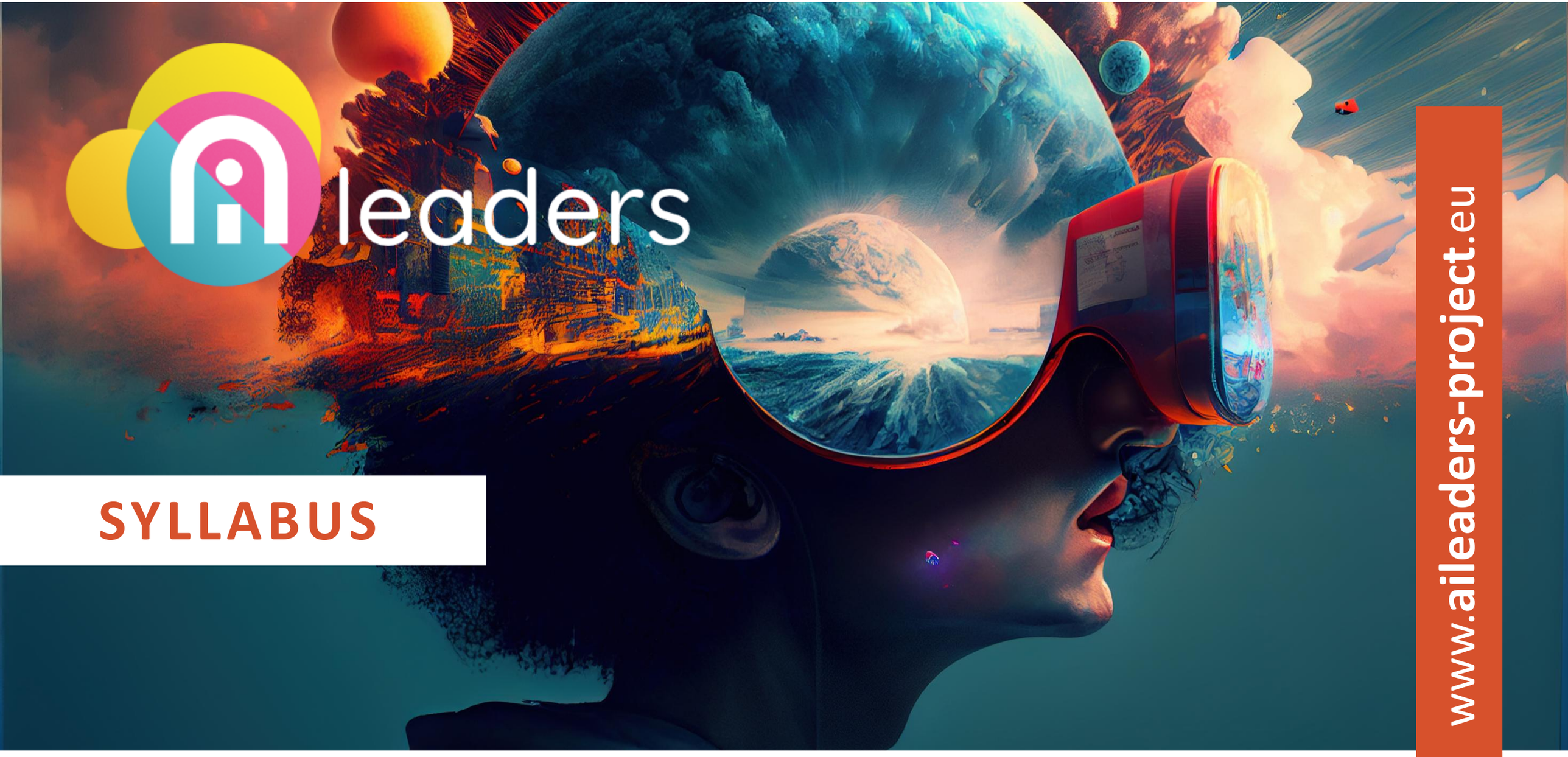

leaders

SYLLABUS

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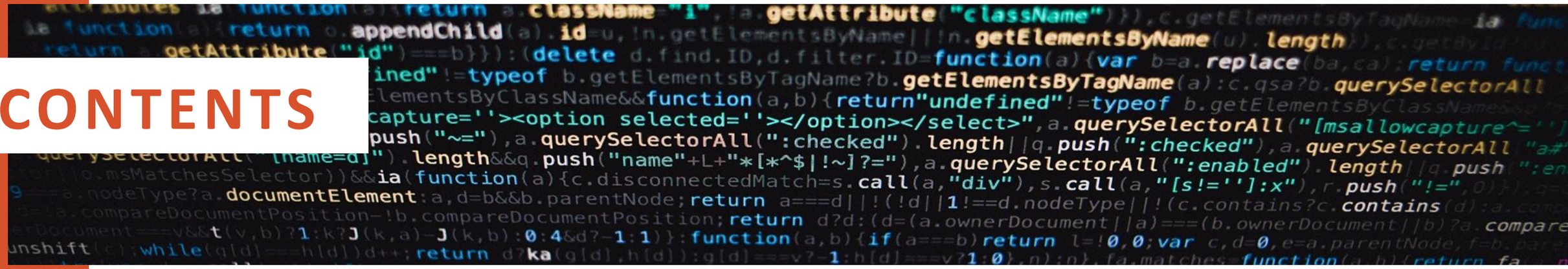

CONTENTS

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INTRODUCTION

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This document outlines the syllabus for the AI Leaders program, which comprises a curated collection of open educational resources organized by key business areas:

- Marketing and Sales
- Human Resources
- Accounting and Finance
- Supply Chain
- Leadership

The syllabus details the learning outcomes, prerequisites, and the estimated time required for completion.

The program features a comprehensive set of interactive and practical learning tools, including 10 case studies, 5 simulations, 5 scenario exercises and 2 sets of guidelines/quizzes.

SYLLABUS

MARKETING AND SALES					
Contents	Learning Outcomes	DigiComp Framework	OER	Pre-requisites	Duration
Personalization and Customer Engagement	• The student will be able to **identify** ethical challenges and regulatory considerations in AI-driven personalization for marketing and sales. • The student will be able to **design** recommended systems that prioritize fairness and inclusivity, using algorithms like FairGBM. • The student will be able to **evaluate** the impact of unethical personalization practices on customer trust and opportunities.	4.Safety	Case study on the bad use of recommender systems (information bubbles).	None.	1.5h
			Guidelines on how to create a fair recommender system.	Technical background (Computer Science, Data Science, Data Analytics).	3h
			Scenario Exercise on FairGBM (fairness-aware ML algorithm focused on group-wise fairness considerations).	Python coding skills.	2h
Content Creation and Optimization	• The student will be able to responsibly **generate** and **optimize** content using AI tools, ensuring inclusivity in language and imagery. • The student will be able to **identify** and **mitigate** potential biases or	1.Information and data literacy; 3. Digital content creation	Guidelines on how to ethically use of Gen AI in Business with practical examples.	None.	3h
			gui on LLM Hallucination to show and discover how LLM may provide inaccurate information or 'hallucinations'.	None.	2h
			Scenario Exercise on Trust & Safety Tycoon / Moderator	None.	2h

	inaccuracies in AI-generated content. • The student will be able to **analyze** the impact of content moderation and ethical decision-making on user experience and business performance.		Mayhem: simple videogame that puts the player in the shoes of a social media company manager and shows the complexity of content-moderation decisions and how these affect the performance of the company.		
			Simulation on Diffusion bias Explorer: by using a series of pre-defined prompts, the tool allows to compare outputs and expose biases whether by comparing different outputs by the same model or the same output across models	None.	2h
Predictive Analytics	• The student will be able to **design** and **evaluate** models that avoid introducing biases in customer behavior predictions. • The student will be able to **apply** tools like Model Cards to uncover and address biases in predictive AI systems.	1.Information and data literacy; 3. Digital content creation; 4. Safety	Scenario Exercise on An AI model for predicting banking deposit subscription without biases.	Technical background (Computer Science, Data Science, Data Analytics).	3h
			Simulation using Model Cards Face Detection to learn how face detection works and understand its limits and uncover underlying biases.	None.	2h
Customer Support	• The student will be able to **evaluate** the impact of	1.Information and data literacy; 2.	Case study on how some companies are using bots to replace humans.	None.	1.5h

	replacing human agents with bots on customer satisfaction and trust. • The student will be able to **create** a functional chatbot using beginner-friendly tools, incorporating ethical design principles.	Communication and collaboration; 5. Problem solving	Scenario Exercise on how to develop your own chatbot.	None.	3h
HUMAN RESOURCES					
Contents	Learning Outcomes	DigiComp Framework	OER	Pre-requisites	Duration
Recruitment and Candidate Screening	• The student will be able to **identify** ethical pitfalls and best practices in AI-driven recruitment and candidate screening. • The student will be able to **implement** fairness-aware algorithms, such as FAIR* or FairGBM, to ensure diverse and equitable candidate rankings. • The student will be able to **audit** AI models for fairness and inclusivity using tools like the What-if-Tool and Google Fairness Indicators.	1.Information and data literacy; 5. Problem solving	Case study about bad use of candidate screening.	None.	1.5h
			Case study: FA*IR ranking algorithm (including protected groups in the final ranking).	Technical background (Computer Science, Data Science, Data Analytics).	1.5h
			Simulation using tools for detecting biases in data or algorithms: What-if-Tool (visual tool to understand coding of machine learning model behavior), Google Fairness Indicators (identifies biases in data), FairGBM (fairness-aware ML algorithm).	• What-if-Tool: None for website-based version. Python coding skills for python notebook version.	2h

				• Google Fairness Indicators: Python coding skills. • FairGBM: Python coding skills.	
Employee Performance Management	• The student will be able to **use** AI tools to track and analyze employee performance metrics transparently and ethically.	1.Information and data literacy	Case study about analyzing employee performance.	None.	1.5h
ACCOUNTING AND FINANCE					
Contents	Learning Outcomes	DigiComp Framework	OER	Pre-requisites	Duration
Financial Forecasting and Analysis	• The student will be able to **analyze** and **address** ethical challenges in financial forecasting and analysis. • The student will critically **analyze** potential biases in AI algorithms used in financial forecasting and analysis.	1.Information and data literacy; 5. Problem solving	Simulation using tools for detecting biases in data or algorithms: What-if-Tool (visual tool to understand coding of machine learning model behavior), Google Fairness Indicators (identifies biases in data), FairGBM (fairness-aware ML algorithm).	• What-if-Tool: None for website-based version. Python coding skills for python notebook version. • Google Fairness Indicators:	2h

				• Python coding skills. • FairGBM: Python coding skills.	
Lending, Credit Scoring and Risk Assessment	• The student will be able to **identify** ethical risks in credit scoring models and propose corrective measures. • The student will **understand** the key ethical issues in AI applications for lending and credit scoring, including bias, discrimination, transparency, and data privacy.	1.Information and data literacy; 4. Safety; 5. Problem solving	Case study on the use of biased or non-representative data in AI models for credit scoring.	None.	1.5h
			Case study on Rentgrow (company that uses AI and credit history to decide access to housing)	None.	1.5h
Auditing and Regulatory Compliance	• The student will be able to **identify** potential conflicts in AI audits and propose strategies to address them. • The student will be able to **use** tools like Aequitas to audit predictors for bias and fairness in regulatory settings.	3. Digital content creation; 5. Problem solving	Guidelines on the requirements of AI for auditing.	None.	3h
			Simulation on Aequitas: tool for auditing predictors regarding bias and fairness, as well as experimenting with fair ML methods in binary classification settings.	Python coding skills.	3h
Portfolio Management	• The student will be able to **understand** the ethical implications of algorithm-driven trading platforms.	1.Information and data literacy	Case study on the use of algorithm-driven trading platforms.	None.	1.5h

SUPPLY CHAIN					
Contents	Learning Outcomes	DigiComp Framework	OER	Pre-requisites	Duration
Demand Forecasting	• The student will be able to **understand** the ethical use of AI in demand forecasting, respecting regional purchasing power and promoting fairness.	1.Information and data literacy; 5. Problem solving	Case study on the use of AI for demand forecasting.	None.	1.5h
Inventory Management	• The student will be able to **design** inventory management strategies based on environmental impact metrics.	3. Digital content creation; 5. Problem solving	Case study on the use of AI to avoid wastage.	None.	1.5h

SUPPLY CHAIN					
Contents	Learning Outcomes	DigiComp Framework	OER	Pre-requisites	Duration
Logistics Optimization	• The student will be able to **understand** the function of AI in streamlining reverse logistics operations. • The student will be able to **assess** the benefits and limitations of AI in the context of sustainability and operational performance. • The student will be able to **explore** ethical and reputational risks associated with automated return management. • The student will be able to **develop** critical thinking around AI implementation in supply chain and circular economy initiatives.	1.Information and data literacy; 4. Safety; 5. Problem solving	Case Study on Leveraging AI for Reverse Logistics Optimization	None.	1.5h

LEADERSHIP					
Contents	Learning Outcomes	DigiComp Framework	OER	Pre-requisites	Duration
Decision-Making Support	• The student will be able to **identify** and **avoid** data sources that could introduce bias into AI predictions. • The student will be able to **validate** AI-driven predictions through diverse team input to ensure fairness and accuracy.	1.Information and data literacy; 4.Safety; 5. Problem solving	Scenario Exercise: Criminal Justice System Bias.	Python coding skills.	3h

As a technologist, I see how AI and the fourth industrial revolution will impact every aspect of people's lives.

Fei Fei Li

Follow our journey

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