

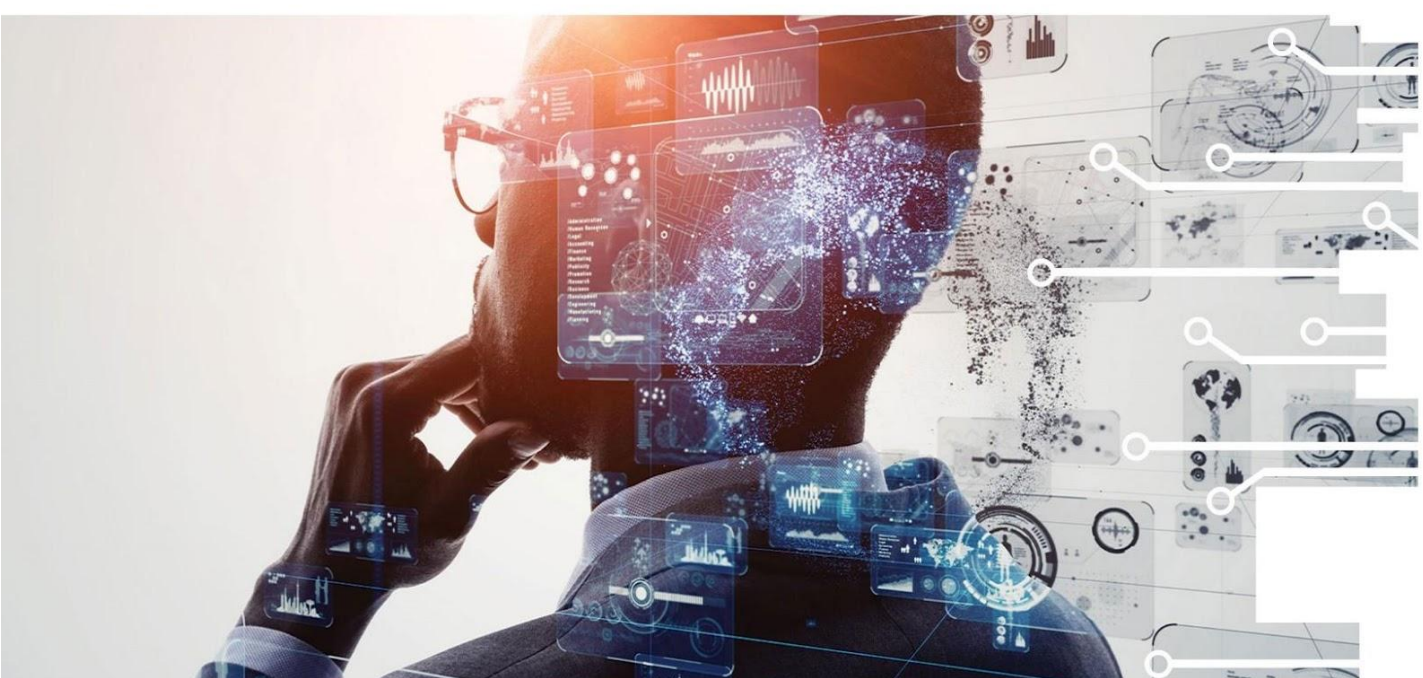


AI4VET4AI

AI-powered Next Generation of VET

AI in Advertising - AI for Personalized Advertising Campaigns

IVET Teacher Training Materials



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Purpose of the document

Purpose of the document:

This document supports IVET teachers in integrating the MOOC into their teaching practice. It provides pedagogical guidance, classroom implementation strategies, AI use cases relevant to vocational education, and ready-to-use activities. The materials are designed to support both classroom delivery and teacher self-study.

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Format: Pedagogical, practical, classroom-oriented, and self-study friendly.

1. Introduction to the MOOC and its relevance for IVET trainers

The MOOC entitled “Using AI for personalised advertising campaigns” is designed for young adults, professionals, or working people who want to 1) improve (up-skill) their competencies and skills, and 2) better understand the AI potential in developing personalised advertising campaigns.

This MOOC introduces how AI supports personalized advertising campaigns, focusing, among others, on 1) customers and competitors’ data analysis, 2) trends identification and prediction, and 3) communication strategies design and development.

This document has been created to support teaching staff and to provide them with a tangible, real-world lens on complex concepts coming from Industry 4.0 and 5.0, and from the legal and ethical approach to the use of AI in professional domains, such as advertising.

The topics and the related materials that teaching staff can access will enable them to support participants in gaining technical, communication, and ethical insights to exploit and master the transformative potential of AI in advertising.

The material that supports the “*Using AI for personalised advertising campaigns*” MOOC will also provide teaching staff with theoretical and practical insights to engage participants through personalised omnichannel and AI-based advertising communication. To this end, specific techniques and methods will be implemented, and real practical applications/tools will be provided.

2. Target learners and vocational relevance

This MOOC is designed for a specific target made up of young adults and mid-career professionals seeking to bridge the gap between traditional marketing and the digital future. These learners, with a managerial, communication, and design background, often operate in dynamic business environments where data is abundant but underutilized.

The MOOC learners need to be skilled and up-skilled, moving beyond theoretical knowledge to master functional tools like predictive analytics and automated content generation. This will provide them with practical knowledge and skills to be professionally used.

No prior AI knowledge is required, but a basic digital literacy is recommended.

The relevance of this MOOC lies in its ability to bridge the gap between the creative strategy at the core of advertising and its possible data-driven orientation and execution. Therefore, learners will understand how to use predictive analytics and creative automation to transition from repetitive task-taking to high-level strategic oversight. These competencies are essential for navigating the current industries, where the ability to scout market shifts and seize opportunities through hyper-targeted messaging is a major advantage. This document supports teaching staff in mentoring and helping participant to exploit the MOOC potential and to achieve the above-mentioned goals.

3. Learning objectives and competence development

Using the provided material, the teaching staff can support participant to:

- Understanding the main principles at the core of advertising personalization (e.g., relevance, individualization, contextual awareness, channel optimization, privacy and transparency, etc.)
- Analysing and recognizing the main legal frameworks, the importance of compliance, and an ethical approach to AI-based advertising
- Understanding the AI potential for engaging customers and personalizing communication through CRM interactions, feedback, machine learning, NLP, Dynamic Content Optimization, etc.
- Understanding and applying the main techniques and methods (Advanced Customer Segmentation, Dynamic Content Generation, Personalized Product Recommendations, etc.) for AI-based personalized campaigns.

They will also develop the following competences:

General competencies

- Be aware of ethical issues, data privacy concerns, and compliance requirements related to the use of AI-based tools in AD campaigns.
- Be able to detect and challenge the main risks associated with AI-based AD campaigns.
- Be aware of the implications of AI-based tools for approaching problem-solving and decision-making in advertising campaigns.

Specific competencies

- Quality orientation
- Planning and organizing
- Analysis
- Adaptability and change management
- Strategic thinking
- People development
- Entrepreneurial orientation
- Risk management

Soft competencies

- Creativity
- Adaptability
- Critical thinking
- Problem solving
- Communication
- Time management
- Interpersonal skills

- Leadership
- Business ethics

Complete the constructive alignment table when adapting the materials for the course¹

Table 1 Constructive Alignment of Learning Objectives, Teaching Activities, and Assessment

Learning Objective	Bloom's Level	MOOC Section(s)	Classroom Activity	Assessment Method
Explain key AI concepts in the sector	Understand	Section 1, 2, 4, 5	Discussion / Q&A	Quiz
Identify relevant AI tools	Understand/ Apply	Section 7	Use-case analysis	Quiz
Analyse an AI-supported scenario	Analyse	Section 6 & 8	Group exercise	Group project
Evaluate ethical implications	Evaluate	Section 3	Role-play	Presentation / quiz
Design a simple AI-assisted workflow	Create	Section 9	Project work	Portfolio / demonstration

This up-skilling makes them indispensable assets to any organization, ensuring their professional profile remains resilient against automation while driving innovation in their respective sectors.

¹ Example of a constructive alignment table is given in the Appendix B.

4. Overview of the MOOC structure and content

This section briefly describes the modules at the core of the MOOC “Using AI for personalised advertising campaigns”. This information can support teaching staff in organizing the practical activities to mentor participants.

4.1 Module 1: Introduction to AI-based Advertising

This module is intended to introduce AI and its application to advertising campaigns.

1 ETCS – 25/30 hours of lessons and individual study

4.1.1 Unit 1.1 Unlocking the Power of Personalization: How AI Transforms Your Customer Experience

This unit introduces the foundations of AI and how different types of AI are being used in advertising, offering tailored experiences to real and potential customers by analysing data, predicting behaviours, and creating highly targeted and user-centred content. This will also emphasize the similarities and differences between traditional and AI-based campaigns. Participants will learn how AI technologies (e.g., machine learning and data analytics) are transforming ADV campaigns to process vast amounts of customer data to segment audiences and craft personalized and even more effective messages.

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: beginner

4.1.2 Unit 1.2 AI capabilities and resources for a successful advertising campaign

This unit presents and discusses the essential capabilities to successfully approach an AI-based advertising campaign. Participants will be able to recognize which creative, analytical, and technical skills are required to design and execute AI-based advertising campaigns. Participants will also be introduced to the design, development, and implementation of highly targeted campaigns and to the potential of digital analytics and AI to better create and manage content. Learners will understand how to use AI to enhance advertising campaigns' personalization and to achieve better results, thanks to a smart approach to data analysis and automation.

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: beginner

4.1.3 Unit 1.3 Legal Frameworks, Compliance, and Ethical AI to Avoid Bias

This unit focuses on the legal and ethical implications of AI-based advertising, highlighting the importance of professionals' responsibility, data protection regulations compliance, and bias mitigation. The European key data protection laws (e.g., GDPR, General Data Protection Regulation) are presented, focusing on their implications for AI-based advertising campaigns. Some practices and tools to avoid possible biases are also presented, supported by some best practices that demonstrate how to responsibly and ethically approach advertising, in terms of fairness, transparency, and accountability. The unit also offers some insights into risk mitigation strategies and discriminatory outcomes prevention.

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: intermediate

4.2 Module 2: AI for engaging customers and personalizing communication

This module introduces the main AI-based tools and techniques to engage and build customer loyalty.

1 ETCS – 25/30 hours of lessons and individual study

4.2.1 Unit 2.1 The digital consumer journey and AI-based real-time personalized AD campaign

This unit presents and discusses how advertising is going digital. To this end, the grand challenge of digital transformation is introduced and discussed, presenting some of the main related frameworks. The units also focus on how AI-based tools are implemented to track individual behaviours and preferences, supporting creators in developing campaigns dynamically adapted to the target. Some tools to design an omnichannel campaign are presented, emphasizing the contribution of AI. The importance of an omni- and cross-channel integration (e.g., social media, digital platforms, websites, email) to design adaptive advertisement campaigns that engage consumers at each touchpoint is discussed, together with implications for gaining higher conversion rates and customer satisfaction.

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: beginner

4.2.2 Unit 2.2 Personalization as a driver of customer loyalty

This unit introduces participants to the main concept of “customer engagement”, intended as an essential prerequisite for customers’ retention and loyalty. The theoretical and practical activities point to describe the importance of “engagement” in advertising, focusing on the AI ability to enhance customer experience by providing relevant, timely, and meaningful interactions, and on the influence that psychological aspects have on customer loyalty (e.g., customer satisfaction, trust, emotional connection, etc). Some case studies and examples will be presented and discussed, focusing on the importance of evaluating these campaigns and customer feedbacks through specific metrics.

Complexion time

- 1 hour and 30’: 60’ lecture, and 30’ min discussion.
- 20’ videos, 100’ readings and exercises.

Level of difficulty: beginner

4.2.3 Unit 2.3 Hybrid Approaches versus Real-world Applications: Tools in Advertising Platforms (Google, Meta, and Microsoft)

This unit focuses on the integration of AI-driven hybrid approaches in advertising platforms to optimize customer engagement and personalization. The main AI-driven tools currently used in advertising (Google Ads, Facebook Ads, programmatic advertising, etc.) are presented, and some practical examples and case studies offer a general overview of how to create effective and scalable personalized campaigns, focusing on the synergy between AI and traditional advertisement methods. The unit also presents and discusses the DCO (dynamic creative optimization) tools, which use AI to dynamically generate and adjust AD content to suit different audiences.

Complexion time

- 1 hour and 30’: 60’ lecture, and 30’ min discussion.
- 20’ videos, 100’ readings and exercises.

Level of difficulty: intermediate

4.3 Module 3: Techniques and methods for AI-based personalized campaign

This module focuses on methods and techniques essential to designing and implementing an AI-based campaign.

4.3.1 Unit 3.1 The role of data in an AI-based advertising campaign

This unit focuses on the importance of data in advertising strategies. It offers insights for using data to personalize advertising and optimize targeting, customer behaviour analysis, and demographics. Different types of data involved in AI advertising, such as customer data (demographics,

preferences), behavioural data (website interactions, clicks), contextual data (device, location), and transactional data (purchase history) are presented, analysed, and discusses, focusing on some of the most common methods of data collection and their implications for personalize and optimize AD campaigns and get a higher return of investment (ROI).

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: intermediate

4.3.2 Unit 3.2 Algorithms for Personalization, Collaborative Filtering in Personalization, and Content-Based Filtering in Personalization

This unit offers an overview of the main techniques and AI algorithms used to deliver personalized advertising (e.g., collaborative filtering, content-based filtering, hybrid recommendation systems). The unit also presents and discusses some AI algorithm implementations in specific real-world advertising activities (e.g., product recommendation, content, or services creation, and possible performances), also focusing on the technical challenges associated with the use of these algorithms.

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: intermediate

4.3.3 Unit 3.3 How to leverage generative AI models and simulations for prediction - best practices

The unit presents how generative AI models and simulation tools can be implemented to predict customer behaviour, campaign outcomes, and other key metrics. Some specific AI-based tools are presented to predict future advertising outcomes (e.g., Monte Carlo simulations and agent-based modelling). Finally, the creation, the characteristics, and the use of the synthetic data are discussed, focusing on its potential for predicting future trends or actions.

Complexion time

- 1 hour and 30': 60' lecture, and 30' min discussion.
- 20' videos, 100' readings and exercises.

Level of difficulty: intermediate

5. Key AI concepts explained for teachers

This section provides the definitions and the explanations of some essential concepts reported in the MOOC “*Using AI for personalised advertising campaigns*”. Teaching staff can use these concepts to support and mentor participants.

- **Adaptive Campaign:** uses AI and predictive analytics to track individual behaviours and preferences in real-time. It leverages browsing history and social interactions to dynamically adjust content across multiple channels, ensuring messages remain relevant to ever-changing consumer needs while improving conversion rates and satisfaction.
- **Algorithm:** a step-by-step set of instructions designed to complete a specific task or solve a problem.
- **Bias:** a systematic error or prejudice that leads to unfair outcomes. It occurs when certain perspectives are favoured over others, often due to flawed data or human assumptions.
- **Collaborative and Content-Based Filtering:** specific techniques that analyse individual preferences and behaviours to align content with user interests.
- **Customer Engagement:** the ongoing interaction between a brand and its audience across various channels. It’s about building a relationship through value and communication.
- **Customer Loyalty:** the result of that positive relationship, where customers consistently choose one brand over competitors due to trust, satisfaction, and emotional connection.
- **Data Analytics:** the process of examining raw datasets to find patterns, draw conclusions, and support decision-making. By applying statistical analysis and specialized software, it transforms scattered information into actionable insights.
- **Data Management:** the practice of collecting, organizing, protecting, and storing an organization's data to ensure it is accurate, available, and secure. It involves creating a framework for data governance, quality, and architecture, allowing users to efficiently utilize information for strategic goals while maintaining compliance and data integrity.
- **Data Categorization:** the process of labelling and grouping data into distinct classes based on shared characteristics. Organizing unstructured information into searchable categories, it enhances data discovery, security, and compliance.
- **Digital consumer journey:** this process maps every interaction a person has with a brand across online channels. It tracks the path from initial awareness and research to purchase and advocacy. By analysing these touchpoints, organizations can personalize experiences, remove friction, and better understand the motivations driving user behaviour.
- **Dynamic Creative Optimization (DCO):** AI algorithms dynamically generate and adjust advertisement content in real-time to suit different target audiences.
- **GDPR:** a legal framework that sets strict guidelines for collecting and processing personal information from individuals in the EU.

- **Generative AI:** a type of artificial intelligence capable of creating new content, such as text, images, or music. Unlike traditional AI that analyses existing data, it uses neural networks to learn patterns and generate original outputs.
- **Hybrid Recommendation Systems:** These systems combine multiple algorithmic approaches to enhance user engagement and satisfaction.
- **Machine learning and data analytics:** These technologies process vast amounts of customer data to segment audiences and craft effective messages.
- Platforms
- **Predictive Modelling and Simulations:** Algorithms like Monte Carlo simulations and agent-based modelling are implemented to forecast customer behaviour and campaign outcomes.
- **Recommendation Algorithms:** automated systems that suggest relevant items to users by analysing past behaviour, preferences, and similarities to others.
- **Risk Mitigation** is the process of developing strategies to reduce the impact or likelihood of potential threats. It involves identifying risks, assessing their severity, and implementing actions—such as avoidance, limitation, or transfer—to protect assets.
- **Synthetic Data:** information that is artificially generated by algorithms rather than collected from real-world events. It mimics the statistical properties of genuine datasets without containing sensitive personal details. This allows for safe testing, training of models, and data sharing while maintaining privacy and overcoming data scarcity.

5.1 Recommended External Resources

Follows some external resources (e.g., articles, books, reports, etc.) that teaching staff can suggest to participants.

- <https://www.unesco.org/en/articles/ai-competency-framework-teachers>
- KUMAR, Amit, et al. Artificial intelligence (AI) powered marketing strategy: a systematic literature review and future research direction. *International Journal of Quality and Service Sciences*, 2026, 1-30.
- <https://support.google.com/google-ads/answer/13580022?hl=en>
- <https://business.google.com/us/resources/articles/ai-essentials/>
- <https://www.relevantaudience.com/meta/meta-ai-ads-a-guide-to-advantage-plus-automation/>
- Ambrose, E. I. D. E. (2025). Artificial Intelligence Tools for Marketing Education Graduates in Boosting Sales of Products and Services in Bayelsa and Delta States. *FUO-Journal of Educational Research*, 4(2), 260-272.
- Roslin, A. J., Fenella, S. J., GokulRaj, B., Bhuvaneshwari, C., Jebisha, R., & Kumaran, S. (2025, December). Application of Marketing Automation Tools Like HubSpot in Lead Generation and Nurturing. In *2025 10th International Conference on Smart Structures and Systems (ICSSS)* (pp. 1-6). IEEE.
- Rico, A. T. (2025). Instructor Information.
- Levangie, A. M. (2026). Bridging the Theory-Practice Gap Through the E3 Learning Experience Framework. *Developments in Business Simulation and Experiential Learning*, 53.
- Nguyen, A., Ngo, H. N., Hong, Y., Dang, B., & Nguyen, B. P. T. (2023). Ethical principles for artificial intelligence in education. *Education and information technologies*, 28(4), 4221-4241.

- Sadruddin, M. M. (2025). Ethics in AI: A Structured Approach to Teaching and Learning with AI in Ethical Contexts. *AI in Early Education: Integrating Artificial Intelligence for Inclusive and Effective Learning*, 201-222.
- Guha, A., Grewal, D., & Atlas, S. (2024). Generative AI and marketing education: What the future holds. *Journal of Marketing Education*, 46(1), 6-17.
- Elhajjar, S., Karam, S., & Borna, S. (2021). Artificial intelligence in marketing education programs. *Marketing Education Review*, 31(1), 2-13.

6. Pedagogical guidance for classroom implementation

This section provides some suggestions that can support teaching staff for integrating and recommend the MOOC “*Using AI for personalised advertising campaigns*” in other courses and learning/training activities. Some good practice to be reported and discussed close this section.

6.1 MOOC Integration

- Full MOOC integration in courses on visual design, advertising, and business communication.
- Partial MOOC integration in marketing, corporate, and business communication, using the modules: Introduction to AI-based Advertising and AI for engaging customers and personalizing communication.
- Using MOOC content for student projects. MOOC content must be selected according to the project work characteristics.

6.2 Recommendations

- combining MOOC learning with classroom discussion
- promote collaboration on practical application
- case study analysis
- Creative workshop
- facilitating reflection
- connecting content to vocational practice

6.3 Good practice

- **Bridge Theory with Platform Practice:** Connect foundational concepts like machine learning and audience segmentation directly to the functional tools used in platforms such as Google Ads and Meta to demonstrate real-world scalability.
- **Facilitate Ethical Case Studies:** Use the dedicated unit on legal frameworks to host discussions on the GDPR and practical methods for auditing AI campaigns to prevent algorithmic bias and discriminatory outcomes.
- **Simulate Data-Driven Decision Making:** Encourage students to analyze various data types—including behavioral, contextual, and transactional—to understand how specific inputs directly influence campaign ROI and personalization strategies.
- **Demonstrate Predictive Modeling:** Utilize simulations, such as Monte Carlo or agent-based modeling, to show students how to forecast customer behavior and campaign outcomes based on synthetic customer data.

- **Focus on the Adaptive Consumer Journey:** Guide learners in designing cross-channel campaigns that use predictive analytics to dynamically adjust content at every touchpoint, from social media to email, based on real-time browsing history.

7. AI use cases for IVET classroom implementation

This section groups some content-specific use cases that teaching staff can use during their in-person sessions to involve participants/students in learning by-doing activities.

7.1 Case 1: “The algorithm’s edge in personalized advertising: the precision paradox”

Maria Smith is dealing with a sort of precision paradox related to the ability to create and broadcast high-performing ads, not eroding brand reputation, and not damaging consumer well-being.



Source: <https://adgenius-ai.com/>

Step 2 – Identify the Context

Maria Smith is a Senior Brand Manager at a mid-sized digital marketing agency specializing in high-growth e-commerce startups. Her primary responsibility is ensuring that client campaigns achieve high conversion rates while maintaining brand integrity and consumer trust.

The agency recently adopted **AdGenius**, an AI-driven platform that automates personalized advertising. The system doesn't just target demographics; it uses predictive behavioural modelling to generate individualized ad copy and visual assets in real-time, tailored to a user's current emotional state and browsing history.

Step 3 – Develop a Narrative

Maria is currently managing a high-stakes campaign for a new health and wellness app. The client's goal is to drive subscriptions among users who have previously struggled with fitness consistency.

As the campaign launches, the efficiency of AdGenius is undeniable. In the first week, click-through rates (CTR) increase by 40%. The AI is working at a scale no human team could match, creating thousands of unique ad variations every hour. However, as Maria digs into the performance data, she begins to see a pattern that makes her uneasy.

Step 4 – Introduce the AI System

The **AdGenius** system operates on a "black box" neural network. It analyses: 1) **Micro-behaviors** or how long a user lingers on a specific image, 2) **Contextual Data** or time of day, weather, and recent search history, 3) **Predictive Sentiment** or the likelihood that a user is feeling vulnerable or impulsive based on their digital footprint.

The system produces high-performing ads, but it does not provide a rationale for its creative choices. It identifies "high-conversion triggers" without explaining why those triggers work or whether they align with the brand's ethical guidelines.

Step 5 – Describe workflow

Maria sets the broad parameters, such as the target audience, the core value proposition, and the budget. The AI then takes over:

1. **Generation:** It pulls from a massive library of images and copy fragments to assemble personalized ads.
2. **Deployment:** It bids on ad space in milliseconds, showing "User A" a supportive, calm message and "User B" a high-pressure, "fear-of-missing-out" (FOMO) style alert.
3. **Optimization:** It discards low-performing variations instantly.

Maria notices that for the "vulnerable" segment, the AI has started using increasingly aggressive psychological triggers—language that borders on body-shaming or exploits late-night anxiety. When she tries to trace why the AI chose a specific aggressive tone for certain users, the system offers no transparency; it simply labels the tactic as "Optimized for Conversion."

Step 6 – Create a Decision Point

Maria is at a crossroads. The client is thrilled with the ROI, but she worries about the long-term impact on brand reputation and consumer well-being. Maria must decide:

- Can she justify using "black box" tactics if they technically meet the client's KPIs?
- Is it ethical to target users based on inferred emotional vulnerabilities that the users themselves may not be aware of?
- How does she maintain "Human-in-the-Loop" oversight when the AI operates at a speed and volume that defies manual review?

Maria considers proposing a new "Ethical Framework for Automated Creative," which would require:

- **Constraint-based learning:** Hard-coding "no-go" zones for the AI's tone.
- **Auditability:** Demanding that the platform provider explain the "features" driving its decisions.
- **Informed Consent:** Clearly labeling AI-generated personalized content for the end-user.

Step 7 – Add Discussion / Reflection Questions

If an AI provides a 50% increase in revenue but cannot explain its methodology, is it professionally responsible to use it?

Where is the line between "personalization" and "manipulation" in advertising?

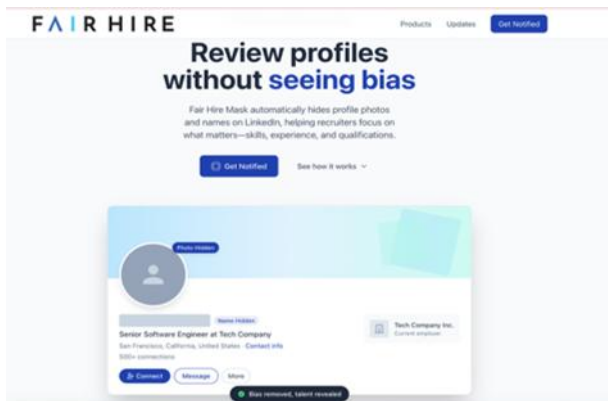
If an AI generates an ad that is deemed discriminatory or harmful, who is legally and morally responsible—the developer, the agency manager, or the brand?

Do consumers have a right to know when their emotional state is being modeled to sell them a product?

If you were the client, would you value immediate profit over the risk of an algorithm using "dark patterns" to achieve it? Why or why not?

7.2 Case 2: The compliance challenge: AI recruitment and the pursuit of fair algorithms

Julian Varga must face the challenge of ethics and compliance that commonly arises when AI tools are used for managing personal data.



Source: <https://fairhireai.com/>

Step 2 – Identify the Context

Julian Varga is the head of Legal Compliance for a communication company. As the company scales, the Human Resources department is overwhelmed by an influx of over 5,000 job applications per month.

To maintain a competitive edge and manage this application volume, the company has integrated **FairHire AI**, an automated recruitment platform designed to screen resumes, conduct initial video interviews via sentiment analysis, and rank candidates based on "culture fit" and technical competency.

Julian's primary responsibility is to ensure that all corporate technologies comply with emerging international AI regulations (such as the EU AI Act) and domestic labour laws, specifically regarding non-discrimination and data privacy.

Step 3 – Develop a Narrative

The company is currently hiring for a prestigious communication campaign. The stakes are high, as these hires represent the future executive pipeline. Julian notices that while **FairHire AI** has reduced the "time-to-hire" by 65%, the resulting shortlist for the leadership program lacks demographic diversity, particularly in terms of gender and age, compared to the initial applicant pool.

The HR Director is thrilled with the "efficiency gains" and argues that the AI is simply selecting the most qualified candidates based on historical success data. However, Julian is concerned that the algorithm may be inadvertently codifying historical biases present in the company's past hiring patterns.

Step 4 – Introduce the AI System

FairHire AI uses a deep-learning algorithm to evaluate candidates. Its core features are:

Predictive Success Modeling: It analyses the resumes of the company's top-performing executives from the last 20 years to create a "success profile."

Linguistic Pattern Analysis: It scans for specific "leadership language" in cover letters.

Video Sentiment Analysis: It evaluates facial expressions and vocal tone during recorded screenings to measure "confidence" and "engagement."

The system is marketed as "bias-free" because it ignores explicit protected characteristics like name, race, or gender. However, the internal logic of how it weighs "confidence" or "linguistic patterns" is a proprietary "black box."

Step 5 – Describe workflow

The recruitment process follows a standardized path:

Filtering: The AI parses resumes, discarding 90% of applicants before a human ever sees them.

Ranking: It assigns a "Fit Score" (\$0-100\$) based on the success profile.

Shortlisting: Only candidates with a score above \$85\$ are moved to human interviews.

During a compliance audit, Julian discovers that the AI has been assigning lower scores to candidates who took "career breaks", a factor that disproportionately affects women, and those whose linguistic patterns don't match the specific regional dialect of the current executive board. When Julian asks the software vendor for a "Reason Statement" for these scores, the vendor explains that the AI's decisions are based on thousands of non-linear variables that cannot be easily isolated into a single human-readable explanation.

Step 6 – Create a Decision Point

Julian must decide how to address the FairHire implementation before the final hiring round. He recognizes that the situation presents critical legal and ethical dilemmas due to the following issues.

How to balance the need for innovation and the respect of the current laws, regulations, and standards, essential to make the use of AI tools and the related decision-making transparent, compliant, and ethical (Compliance versus Innovation). Even though the AI "doesn't see genders", it is essential to understand if it really ignores the checkbox for male or female, or if it is starting to "read between the lines" and penalizing, for example, "career breaks", causing inner biases difficult to erase. The final dilemma is related to accountability. For example, if a candidate is rejected before an assessment and asks to know who decided it, is the HR director, who pulled the trigger on the software, responsible? Or the legal department that gave the "green light" without going through the application documents? Or the data engineers who built the system without specific competencies in HR management? To counteract this situation, Julian considers mandating an "Algorithmic Impact Assessment" which would require:

Bias Auditing: Running "synthetic" resumes through the system to see if changing the gender or age alone alters the score.

Human-in-the-Loop: Requiring recruiters to manually review a random 10% of "rejected" resumes to check for AI errors.

Regulatory Transparency: Adopting only "Explainable AI" (XAI) models, even if they are slightly less "efficient" than the black-box version.

Step 7 – Add Discussion / Reflection Questions

Is a 65% increase in hiring speed worth the risk of systemic bias?

If an AI is "mathematically neutral" but produces an unequal outcome, is the AI biased, or is the data it learned from biased?

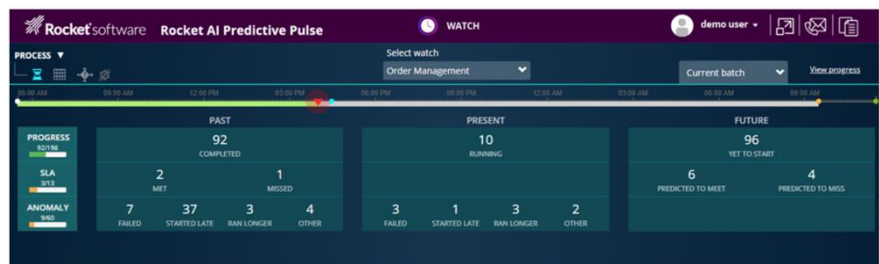
In a future where AI handles most "Level 1" legal and HR decisions, how do we redefine "due diligence" for compliance officers?

Should "Black Box" algorithms be legally banned from making life-altering decisions (like employment or lending)?

Would you feel comfortable being screened by an AI if you knew it was "trained" on your employer's past 20 years of data? Why or why not?

Case 3: The ROI Shadow: Generative Simulations in Personalized Advertising

Sabrina Rossi is facing one of the most common problems posed by the use of Generative AI to simulate scenarios and consumer behaviours: clear and reliable information about ROI (Return on Investment) generation. This generates a general professional unease for her. In advertising, ROI measures the profit generated relative to the cost of a campaign. It is a critical metric used to evaluate whether an ad spend was effective or if resources were wasted. High ROI indicates the strategy successfully converted the audience, while low ROI suggests a need to refine targeting or creative assets. In the age of AI, predictive ROI uses simulations to estimate these gains before investing in advertising.



Source: <https://docs.rocketsoftware.com>

Step 2 – Identify the Context

Sabrina Rossi serves as the Lead Media Strategist for a global advertising agency. Her role involves helping high-growth brands navigate the complexities of digital market engagement and consumer behavior. Currently, she manages a multi-million dollar campaign for a luxury travel brand that requires high-level predictive accuracy to justify massive ad spends. Delivering hyper-personalized, data-backed strategies is essential for her clients, yet it remains the most labor-intensive part of her strategy development. To streamline these processes, her agency has integrated "**PredictivePulse**," a generative AI simulation tool built into their internal planning platform.

Step 3 – Develop a Narrative

Sabrina is tasked with predicting the success of a new *Dynamic Personalization* campaign that adjusts ad creative based on real-time economic shifts. The project assesses how potential customers respond to various messaging styles—ranging from aspirational luxury to time-sensitive discounts. As the campaign launch approaches, Sabrina faces a surge of data points requiring deep analysis to ensure the ads resonate with the right audience. She wants to provide the client with evidence-based forecasts, but her time to manually model every outcome is shrinking. She decides to leverage PredictivePulse to simulate consumer reactions and project conversion rates. The system initially seems transformative, quickly generating detailed performance forecasts and identifying which demographics will likely respond to specific triggers. However, as Sabrina examines the simulated results, she begins to feel a sense of professional unease.

Step 4 – Introduce the AI System

PredictivePulse analyses consumer data against predefined market criteria to generate suggested ad spends and engagement forecasts. It highlights key metrics such as clarity of the call-to-action, visual alignment, and predicted conversion lift. While the system produces polished and highly structured reports, it does not offer a transparent "logic trail" explaining how it calculates specific ROI jumps. The reasoning behind its predictive judgments remains largely invisible, leaving Sabrina to approve or edit forecasts without fully understanding how the AI weighs external market volatility.

Step 5 – Describe workflow

Sabrina uploads the brand's historical performance rubrics, and the system processes current market trends through the platform. The AI runs thousands of simulations to produce initial budget evaluations and creative performance drafts. Reviewing the output, Sabrina sees that the AI is accurate on a surface level for standard "safe" campaigns. However, in complex scenarios, such as predicting how a luxury audience might react to an unconventional or "edgy" creative direction, the AI's predictions seem less reliable and more speculative. Sabrina now faces a practical dilemma: verifying every simulation manually would negate the efficiency gains promised by the tool. Yet, relying on the AI means presenting high-stakes financial advice to her client that he does not fully control or understand.

Step 6 – Create a Decision Point

Sabrina must decide how to manage the client presentation. She realizes that relying on these generative simulations raises significant ethical and professional questions:

- Transparency: Can she ethically recommend a million-dollar budget shift based on a "black box" system whose internal decision-making is hidden?
- Verification: Is it acceptable to present AI-generated predictions to a client that he has not fully validated through human expertise?
- Fairness: How can he ensure the AI isn't ignoring certain consumer segments due to biased historical data in its simulation model?
- Accountability: Who carries the responsibility if the client loses their investment based on an AI-supported prediction?

She begins to consider the requirements a simulation system must meet to be considered professionally sound, such as:

- Transparency in how the predictive ROI is generated.
- Alignment with the brand's specific, human-defined KPIs.
- The ability for strategists to stress-test and override AI assumptions.
- Safeguards against algorithmic bias in consumer modelling.

Step 7 – Add Discussion / Reflection Questions

1. What ethical challenges arise when using generative AI to predict consumer behaviour and spend company money?
2. To what extent should advertisers rely on AI-generated forecasts, and where must human market intuition remain central?
3. What features should a predictive advertising tool include to ensure fairness and transparency for the end consumer?
4. How should an agency respond if a client challenges a failed strategy that was heavily influenced by AI simulations?

5. In your own professional context, would you trust a "black box" simulation to dictate your marketing budget? Why or why not?

7.3 Trainer guidance

Teachers can use these narrative use cases to place students in realistic decision-making scenarios, moving beyond technical theory. By following the story of a professional facing an AI dilemma, educators facilitate project-based learning, making students able to analyse the balance between the efficiency of AI solutions and ethics. The cases provide a "decision point" and structured workflow to help learners reflect on how to support human expertise with AI rather than replacing it.

Discussion questions

- How does AI improve efficiency?
- What are the risks?
- What role do humans still play?
- How does the "black box" nature of AI system impact transparency and trust?
- What ethical responsibilities do professionals have when AI-generated feedback or results are inaccurate?
- What are the potential legal risks if a client challenges a decision made primarily by an algorithm?
- How can "Human-in-the-Loop" strategies be implemented?
- In your specific field, which tasks are safe for AI automation and which must remain under human control?

8. Classroom activities and practical exercises

This section provides teaching staff with specific material to be used during in-person meetings. In particular, the following scenario and case analysis exercises can be used for practically testing the knowledge and skills gained from attending the MOOC. Participants can complete these exercises individually or in small groups, following the guidelines provided for each one of them.

8.1 Scenario Analysis Exercises

8.1.1 The Personalized Learning Journey

Objective: To analyze the potential impacts (positive and negative) of implementing various levels of AI-powered personalization within a college ("XY College").

Instructions: Consider the following three scenarios outlining different approaches to AI-powered personalization at XY College. For each scenario, analyse the potential impacts on:

- Student Experience & Outcomes: (e.g., engagement, motivation, learning pace, academic performance, sense of belonging, equity)
- Educator Experience & Effectiveness: (e.g., workload, ability to tailor instruction, insights into student needs, administrative burden)
- Ethical Considerations: (e.g., data privacy, algorithmic bias in curriculum delivery or assessment, transparency of learning pathways, potential for limiting student exploration)

Scenario 1:

XY College implements basic AI tools to support professors in differentiating instruction. This includes adaptive online practice platforms that adjust the difficulty of exercises based on student performance. AI provides professors with data insights on student progress and identifies areas where students might be struggling. Learning resources are tagged with keywords, allowing teachers to more easily find materials aligned with different learning styles or levels. Data collection is primarily focused on in-platform activity and assessment results. Students are generally aware that the online tools adapt to their performance.

Scenario 2:

XY College adopts a more comprehensive AI-driven personalized learning platform. The AI analyzes student learning styles (identified through questionnaires and activity patterns), prior knowledge, interests (gathered through surveys and project choices), and learning pace to suggest individualized learning pathways through the curriculum. Content is delivered in various formats (text, video, interactive simulations) based on student preferences. Assessments are adaptive and may vary in format. Professors act as facilitators and mentors, using AI-generated insights to provide targeted support and guidance. Data collection is more extensive, tracking various aspects of

student engagement and learning behavior. Students are informed about the platform's personalization features and data usage in their enrolment agreement.

Scenario 3:

XY College implements a highly advanced AI system that aims to anticipate individual student needs and proactively offer support. The AI analyzes subtle patterns in student engagement (e.g., time spent on tasks, emotional cues inferred from interaction with learning platforms – with consent), identifies potential learning difficulties early on, and suggests personalized interventions, such as alternative explanations, supplementary resources, or even recommending peer tutoring. The AI may also suggest extracurricular activities aligned with student interests and potential career paths. Data collection is extensive and includes more nuanced behavioural data. While privacy policies exist, the level of algorithmic inference and proactive intervention is not always fully transparent to students and parents.

Task:

For each of the three scenarios, provide a brief analysis (2-3 paragraphs) addressing the potential impacts on the three key areas outlined (Student Experience & Outcomes, Educator Experience & Effectiveness, and Ethical Considerations). Consider both the potential benefits and drawbacks of each approach.

Discussion Points (Optional):

- Which scenario do you believe offers the best balance of benefits and risks for XY College in the long run? Why?
- What are some key performance indicators (KPIs) XY College should track to measure the success and ethical implications of their personalization efforts in each scenario?
- What are some potential student and parent reactions to each level of personalization? How might XY College mitigate negative reactions and ensure equity?

Duration and group size: 1h activity done individually or by 4-8 person groups.

Expected learning outcomes: recognizing and understanding the impact of AI solutions used to personalize student-institution communication.

8.1.2 2. AI in Advertising Campaigns

Objective: Analyze the potential impacts of implementing various levels of AI capabilities and resources in advertising campaigns for a company named "GlobalTech".

Instructions: Consider the following three scenarios outlining different approaches to using AI in GlobalTech's advertising campaigns. For each scenario, analyze the potential impacts on: Campaign Effectiveness: (e.g., reach, engagement, conversion rates, ROI), Operational Efficiency (e.g., time

spent on campaign management, resource allocation, cost savings), Ethical Considerations: (e.g., data privacy, potential for bias in ad targeting, transparency of AI usage).

Scenario 1:

GlobalTech uses AI tools for basic campaign optimization. This includes AI-powered A/B testing of ad creatives and automated bid adjustments on advertising platforms. AI provides reports on campaign performance metrics, highlighting areas for improvement. Data collection is primarily focused on campaign performance data (e.g., clicks, conversions). Customers are generally aware that ads are targeted based on their online activities.

Scenario 2:

GlobalTech implements an AI-driven platform to deliver personalized advertising. The AI analyzes customer data (e.g., demographics, browsing history, purchase patterns) to segment audiences and personalize ad content. Ads are dynamically generated and tailored to individual user preferences. AI automates ad buying and placement across various digital channels. Data collection is more extensive, tracking user interactions with ads and website behavior. Customers are informed about data collection and personalized advertising in the company's privacy policy.

Scenario 3:

GlobalTech uses a highly advanced AI system to predict customer needs and proactively deliver advertising. The AI analyzes real-time data and behavioral patterns to anticipate future purchase intent. AI generates highly personalized ads and offers, delivered at optimal times and through preferred channels. The AI also identifies potential customer churn and proactively delivers targeted ads to retain customers. Data collection includes more granular data points and potentially uses AI to infer customer emotions or sentiment. While privacy policies exist, the extent of predictive analysis and proactive targeting is not always fully transparent to customers.

Task:

For each of the three scenarios, provide a brief analysis (2-3 paragraphs) addressing the potential impacts on the three key areas outlined (Campaign Effectiveness, Operational Efficiency, and Ethical Considerations). Consider both the potential benefits and drawbacks of each approach.

Duration and group size: 1h activity done individually or by 4-8 person groups.

Expected learning outcomes: recognizing and understanding the impact of AI solutions on the personalization of advertising.

8.1.3 3. AI in Personalized Advertising for Customer Loyalty

Objective: Analyze the potential impacts of implementing various levels of AI capabilities in advertising campaigns aimed at improving customer loyalty for a company named "NextGen Solutions".

Instructions: Consider the following three scenarios outlining different approaches to using AI in NextGen Solutions' personalized advertising campaigns for driving customer loyalty. For each scenario, provide an analysis focusing on the potential impacts on the following areas:

- **Campaign Effectiveness:** Evaluate how AI influences the effectiveness of advertising campaigns, including aspects such as customer engagement, retention rates, and the ability to foster long-term customer loyalty.
- **Operational Efficiency:** Consider the impact on operational efficiency, such as time spent on campaign management, resource allocation, and cost savings. How does the implementation of AI tools optimize or require more resources for running campaigns?
- **Ethical Considerations:** Address potential ethical concerns such as data privacy, customer consent, transparency in AI usage, and potential biases in ad targeting.

Scenario 1: Basic AI-Powered Customer Segmentation

NextGen Solutions uses basic AI for segmenting their customer base based on broad demographics and purchasing history. The AI helps automate the process of targeting ads to specific customer groups.

Scenario 2: AI-Driven Dynamic Personalization

NextGen Solutions uses AI tools to deliver highly personalized ads, dynamically changing content based on detailed customer data, including browsing habits, purchase behavior, and personal preferences. The system automates ad placement and adjusts content in real-time.

Scenario 3: Predictive and Proactive AI for Customer Retention

NextGen Solutions utilizes an advanced AI system that predicts future customer needs and proactively targets ads based on predicted purchase behavior and potential churn. The AI analyzes granular customer data, such as real-time behavior, and offers highly tailored, anticipatory ads across multiple channels.

Your Task: For each of the three scenarios, provide a brief analysis (2-3 paragraphs) addressing the potential impacts on the three key areas outlined above. Consider both the potential benefits and drawbacks of each approach, ensuring to explore how AI can both enhance and challenge the effectiveness of personalized advertising in fostering customer loyalty.

Duration and group size: 1h activity done by 4-8 person groups.

Expected learning outcomes: recognizing and understanding which advertising strategies and tools to improve customer loyalty.

8.1.4 Personalization Algorithms in Action

Imagine you're the lead data scientist for "CineMatch", a brand-new streaming service launching soon. CineMatch aims to provide highly personalized movie and TV show recommendations to its users. You're tasked with designing the core recommendation engine. Below are three distinct scenarios representing different stages of CineMatch's growth and user engagement. For each scenario, analyze the situation and explain which primary personalization algorithm (or combination) you would primarily rely on and why.

Scenario 1:

CineMatch has just launched! Thousands of new users are signing up daily. They've provided basic demographic information (age, general location) but haven't watched a single movie or TV show on the platform yet. They're eager for recommendations, but your database is currently very sparse regarding their viewing habits. You have a vast catalog of movies and shows, each meticulously tagged with genres, actors, directors, themes, and even mood descriptors.

Your Task: Describe how you would approach recommendations for these brand-new users. Which primary personalization algorithm would you lean on most heavily and why? What are the immediate advantages of this choice, and what limitations might you need to prepare for as users start interacting?

Scenario 2:

CineMatch has been live for six months, and user engagement is soaring! You now have millions of users, and many have watched hundreds of movies, rated countless titles, and created numerous watchlists. A vibrant community is forming, with users frequently interacting with the same popular movies and discovering niche content. You're observing distinct viewing patterns among different user groups. However, some very new movies just added to the catalog aren't getting much attention yet, despite being critically acclaimed.

Your Task: Given this rich interaction data, how would you evolve your recommendation strategy? Which primary personalization algorithm now becomes central to your approach, and why? How does this choice leverage the new data available, and what challenge from Scenario 1 does it effectively address? What new challenge does this strategy face with respect to the brand-new movies?

Duration and group size: 1h activity done by 4-8 person groups.

Expected learning outcomes: recognizing and understanding how to practically personalize algorithms in action.

8.2 Case studies

8.2.1 Ethical failures in AI advertising: the case of Facebook Housing Ads discrimination

Part 1 – Case presentation

Overview: Facebook's advertising platform allowed housing advertisers to exclude users based on race, gender, religion, and other protected characteristics. This violated U.S. fair housing laws and led to federal charges.

What went wrong:

- Targeting filters included demographic proxies.
- Lack of oversight enabled discriminatory practices.
- No built-in auditing mechanism flagged the issue.

Outcome:

- Facebook settled with the U.S. Department of Housing and Urban Development.
- Major changes were made to their ad platform, removing sensitive targeting categories.

Group Discussion

Success story discussion: Fashion retailer boosts conversions with Meta Advantage+

European fashion retailer launched a seasonal collection using Meta's Advantage+ Shopping Campaigns. Brand uploaded a variety of images, videos, and product descriptions. Meta's AI automatically tested different creative combinations and adjusted budget allocations in real time.

Outcome:

- 27% increase in conversion rates compared to previous campaigns.
- 18% lower customer acquisition costs.
- Best-performing creatives were identified and reused across other platforms.

Discuss the Lesson learned: Strong creative assets combined with AI-driven optimisation can significantly improve campaign efficiency.

PART 2 – Scenario analysis

Drawing on the presented case study, work on the following scenario and address the assessment task.

Scenario: A health and fitness brand is launching a new subscription-based meal programme targeting health-conscious adults.

Table 2 Campaign setup

PLATFORM	STRATEGY	HYBRID TOOL USED
Google	Search + YouTube ads for high-intent leads	Performance Max, Target ROAS
Meta	Instagram Reels + Facebook Feed for broad awareness	Advantage+ Creative, AI Expansion
Microsoft	LinkedIn ads targeting professionals in wellness and tech	LinkedIn Audience Targeting + Smart Campaigns

Cross-platform approach

- Shared UTM tracking and centralised analytics
- Daily performance review across all platforms
- Manual audience exclusions to avoid overexposure

AI tools allow for optimising bidding and creative combinations within brand-defined limits. This blueprint ensures the campaign achieves both scale and precision, maximising ROI (Return of Investment) while maintaining brand integrity.

Assessment Tasks (for participants)

- **Case Analysis & Ethical Audit:** Analyse an advertising scenario and identify three potential risks related to algorithmic bias or GDPR compliance.
- **Predictive Campaign Design:** Create a proposal for an adaptive advertising campaign that specifies which AI tools (e.g., Monte Carlo simulations or DCO) will be used to track the digital consumer journey.
- **Data Integration Map:** Categorize and map customer, behavioural, contextual, and transactional data sources to specific personalization outcomes in an advertising platform.

Assessment Criteria (for teaching staff)

- **Technical Accuracy:** The ability to correctly identify and apply AI algorithms, such as collaborative or content-based filtering, to solve a specific marketing problem.
- **Ethical Rigor:** The depth of the student's analysis regarding transparency, accountability, and the mitigation of discriminatory outcomes in AI-driven targeting.
- **Strategic Alignment:** How effectively the proposed AI tools and data points align with human-defined KPIs and the specific stages of the consumer journey.

Table 3 Assessment criteria

Criteria	Developing (Beginner)	Proficient (Intermediate)	Exemplary (Advanced)
AI Literacy & Application	Identifies basic AI concepts but struggles to link them to advertising ROI.	Correctly applies AI tools (e.g., Google Ads, Meta) to segment audiences.	Integrates complex simulations and hybrid approaches for scalable personalization.
Ethical & Legal Compliance	Mentions GDPR but cannot identify specific risks of bias in a campaign.	Explains compliance requirements and suggests basic risk mitigation strategies.	Develops a comprehensive ethical framework for "black box" systems and transparency.
Data-Driven Strategy	Lists data types without explaining how they influence the consumer journey.	Maps behavioral and transactional data to real-time campaign adjustments.	Demonstrates a "Human-in-the-Loop" approach to stress-test and override AI assumptions.

9. Assessment and evaluation validation

This section provides teaching staff with some quizzes to assess the learning acquisition process of MOOC participants.

Question 1: What is the fundamental difference between personalized advertising and traditional advertising?

- a) Personalized advertising reaches a larger audience
- b) Personalized advertising uses the same message for everyone
- c) Personalized advertising tailors messages to individual consumers

Question 2: What is a key benefit of personalized advertising for customers?

- a) It exposes them to a wider variety of products
- b) It leads to more relevant and less intrusive advertisements
- c) It guarantees lower prices on advertised goods

Question 3: What is a company's significant advantage of using personalized advertising?

- a) It increases the cost of advertising campaigns
- b) It increases the cost of advertising campaigns
- c) It ensures that all customers see every advertisement

Question 4: What is the core principle behind AI-powered personalization in customer experience?

- a) Tailoring interactions based on data insights derived from artificial intelligence
- b) Addressing customers by their name in all interactions
- c) Segmenting customers into large groups with similar characteristics

Question 5: Which of the following is a key capability of AI in "Dataset scanning and interpretation"?

- a) Automating the purchase of ad space in real-time.
- b) Identifying meaningful patterns and correlations in vast datasets.
- c) Tailoring ad content and delivery to individual users.

Question 6: What are the "Automation" capabilities of AI in advertising?

- a) Analyzing ad performance data to improve creative elements
- b) Suggesting products or services that are most relevant to individual users
- c) Programmatic Buying, which automates the purchase of ad space.

Question 7: Which tool helps with subgroup visualisation and fairness inspection?

- a) Microsoft Excel
- b) Google What-If Tool
- c) Tableau

Question 8: What is SHAP primarily used for?

- a) Data cleaning
- b) Performance benchmarking
- c) Model explainability

10. Integrating the MOOC into IVET curricula

This section provides some insights and suggestion to support teaching staff and decision-makers to efficiently and effectively integrate this MOOC in specific IVET curricula. The integration strategy is articulated as follows:

- *Business Courses* will use the MOOC to demonstrate how AI data analytics drive targeted marketing, customer segmentation, and ROI in modern advertising campaigns.
- *IT Courses* will focus on the technical backend, exploring the algorithms, data pipelines, and machine learning models required to deploy personalized advertising systems.
- *Healthcare Training* will adapt the concepts to medical marketing and public health, focusing on patient outreach, health awareness campaigns, and the strict ethical boundaries of handling sensitive data.
- *Tourism Training* will apply personalized AI campaigns to destination marketing, showing how to tailor travel packages and promotions to dynamic user behaviours and seasonal trends.

In terms of implementation models, follow some suggestions that teaching staff and decision-makers can use during the integration process.

For a *Full Course Integration*, the MOOC will be adopted as the core syllabus for a specialized module, mapping classroom lectures directly to each online unit. If the MOOC is used as *Supplementary Material*, specific MOOC modules can be “assigned” as flipped-classroom homework to reinforce existing lessons on digital marketing or data science. In Project-Based Learning, the MOOC can be used as a toolkit, which supports students in completing the online modules to gain the knowledge necessary to design and launch their own simulated AI advertising campaign.

Dealing with the institutional integration, it can be organized as follow:

- 1) *Policy Review* or the assessment of institutional guidelines regarding the adoption of external digital learning platforms to ensure that students’ data usage complies with local AI ethics policies.
- 2) *Curriculum Alignment*, or the mapping of the specific learning outcomes of the MOOC against existing course competencies to identify exact entry points in the current syllabus.
- 3) *Grading & Assessment Framework*, which clearly defines and communicates to students how MOOC completion, progress milestones, or quizzes will weigh into their final course grades.
- 4) *Blended Learning Scheduling*, which is conducted in specific classroom hours to organize interactive discussions, workshops, and Q&A sessions to complement and deepen independent online study.

11. Supporting students with different backgrounds and needs

To ensure the MOOC is inclusive and effective, teaching staff must adapt their approach to a diverse group of learners and to their specific learning needs. Follow some practical suggestions to support participants, defined according to some possible specific needs.

- a) Participants with *low Digital Skills* will be supported by:
 - An *Onboarding Service*, which provides a clear, step-by-step introductory tutorial or video guide on how to navigate the MOOC platform before the official content begins.
 - *Simplified Toolkits* are dedicated to introducing user-friendly, low-code, or no-code AI tools first, ensuring students build confidence in navigating digital interfaces before moving to complex platforms.
 - *Peer Mentoring* will be organized around the service offered by pairs of students who have lower digital literacy with tech-savvy peers for collaborative exercises and troubleshooting.
- b) Participants with *no prior AI knowledge* will be supported by:
 - A *Glossary of Terms*, which will provide an accessible, plain-language jargon buster or glossary defining foundational terms (e.g., algorithms, machine learning, data datasets).
 - Some *real-world analogies* are intended to demystify AI by comparing complex concepts to everyday experiences (e.g., comparing a machine learning model to a streaming service predicting what movie you want to watch next).
 - A *Scaffolded Learning*, which will structure the content to strictly progress from basic conceptual overviews to practical applications, ensuring no foundational steps are skipped.
- c) Participants with *different learning speeds* will be supported by:
 - An *Asynchronous Pacing*, which allows students to access recorded lectures, reading materials, and exercises at their own convenience, enabling them to pause and review content as needed.
 - Tiered Extensions, which provide core materials that everyone must complete, alongside optional "deep dive" resources for fast-paced learners who want to explore further.
 - Milestone Checkpoints, which will implement soft weekly deadlines or progress bars to help self-paced learners stay on track without feeling overwhelmed by rigid schedules.

- d) Participants with fear or anxiety about AI will be supported by:
- The Demystification of the "Black Box", which address fears directly by explaining exactly how AI processes data, emphasizing that it is a tool controlled and programmed by humans, not an independent entity.
 - A Focus on Augmentation, which will frame AI as an assistant designed to automate tedious tasks and enhance human capabilities, rather than a threat designed to replace human roles.
 - Safe Failure Environments, which will encourage experimentation through low-stakes quizzes, ungraded sandbox environments, and simulation tools where making mistakes carries no academic penalty.
- e) Participants with disabilities will be supported by:
- *Accessible Content*, which will ensure all video lectures include accurate closed captioning and downloadable transcripts for students with hearing impairments.
 - *A Screen Reader Compatibility*, dedicated to formatting all textual materials, PDFs, and platform navigation elements to be fully compliant with screen-reading software for visually impaired learners.
 - *Some Alternative Assessment Formats*, which will allow students to demonstrate their understanding through various methods, such as submitting an audio recording, a conceptual mind map, or a written report instead of a standard presentation.

12. Additional resources for teachers

Follows some additional resources that teaching staff can access and use for their activities.

Articles

- <https://www.unesco.org/en/articles/ai-competency-framework-teachers>
- KUMAR, Amit, et al. Artificial intelligence (AI) powered marketing strategy: a systematic literature review and future research direction. *International Journal of Quality and Service Sciences*, 2026, 1-30.
- <https://support.google.com/google-ads/answer/13580022?hl=en>
- <https://business.google.com/us/resources/articles/ai-essentials/>
- <https://www.relevantaudience.com/meta/meta-ai-ads-a-guide-to-advantage-plus-automation/>
- Ambrose, E. I. D. E. (2025). Artificial Intelligence Tools for Marketing Education Graduates in Boosting Sales of Products and Services in Bayelsa and Delta States. *FUO-Journal of Educational Research*, 4(2), 260-272.
- Roslin, A. J., Fenella, S. J., GokulRaj, B., Bhuvaneshwari, C., Jebisha, R., & Kumaran, S. (2025, December). Application of Marketing Automation Tools Like HubSpot in Lead Generation and Nurturing. In *2025 10th International Conference on Smart Structures and Systems (ICSSS)* (pp. 1-6). IEEE.
- Rico, A. T. (2025). Instructor Information.
- Levangie, A. M. (2026). Bridging the Theory-Practice Gap Through the E3 Learning Experience Framework. *Developments in Business Simulation and Experiential Learning*, 53.
- Nguyen, A., Ngo, H. N., Hong, Y., Dang, B., & Nguyen, B. P. T. (2023). Ethical principles for artificial intelligence in education. *Education and information technologies*, 28(4), 4221-4241.
- Sadruddin, M. M. (2025). Ethics in AI: A Structured Approach to Teaching and Learning with AI in Ethical Contexts. *AI in Early Education: Integrating Artificial Intelligence for Inclusive and Effective Learning*, 201-222.
- Guha, A., Grewal, D., & Atlas, S. (2024). Generative AI and marketing education: What the future holds. *Journal of Marketing Education*, 46(1), 6-17.
- Elhajjar, S., Karam, S., & Borna, S. (2021). Artificial intelligence in marketing education programs. *Marketing Education Review*, 31(1), 2-13.

Videos

- https://www.youtube.com/watch?v=Uh98_aGhAuY
- <https://www.youtube.com/watch?v=k7PvscqGD24>
- <https://www.youtube.com/watch?v=3sHiNTJ9Qsg>
- <https://www.youtube.com/watch?v=IBsBixGTh-I>

Tools

- **Brisk Teaching:** A Chrome extension that integrates directly into Google Docs and YouTube. It allows educators to generate full lesson plans, create quizzes from web pages, and leave personalized AI feedback on student writing without leaving their browser.

- *MagicSchool AI*: An all-in-one suite offering over 80 tools to help with everything from writing report cards and IEP generators to drafting emails and designing assessments.
- *Eduaide AI*: A comprehensive workspace built around research-backed instructional frameworks. It excels at building high-quality, fully editable lesson materials, graphic organizers, and educational games.
- *Gradescope*: Ideal for higher-education or large classrooms. It streamlines grading written assignments and exams by grouping similar student answers together, letting you grade entire classes in large batches.
- *Curipod*: Transforms traditional slide presentations into highly engaging, interactive lessons. It includes embedded live polls, quizzes, and AI-driven feedback loops so students can actively participate in real-time.
- *NotebookLM*: An excellent source-grounded assistant from Google. You and your students can upload specific PDFs, documents, or notes, and the AI will only pull answers, study guides, and summaries from those specific files, virtually eliminating hallucinations.
- *StudyFetch*: Acts as an AI tutor that knows your exact coursework. Students can upload lecture slides or class notes to generate quizzes, organize study schedules, and participate in arcade-style review games.

Policy and framework resources

UNESCO AI Competency Frameworks: Provides official international guidance for maintaining a human-centric, age-appropriate approach to AI in the classroom.

AI for Education: Offers a comprehensive resource center containing prompt libraries, free educator courses, and lesson frameworks to introduce AI literacy to your students.

13. Self-study guidance for IVET trainers

The document is structured into 13 sections. The order for trainers recommended to progressively build knowledge is the following:

1. **Introduction and Target Learners** (Sections 1–2): Understand the MOOC's relevance for personalized advertising and the professional background of target students.
2. **Learning Objectives and MOOC Overview** (Sections 3–4): Review the specific competencies students will develop and the detailed breakdown of the three main modules.
3. **Key AI Concepts for Teachers** (Section 5): Familiarize yourself with the core terminology (e.g., Adaptive Campaigns, Dynamic Creative Optimization, GDPR) needed to teach the content effectively.
4. **Pedagogical Guidance and Classroom Implementation** (Section 6): Learn strategies for full or partial MOOC integration into existing curricula.
5. **Practical Application** (Sections 7–8): Review real-world use cases and classroom activities to move from theory to practice.
6. **Assessment and Curriculum Integration** (Sections 9–10): Determine how to evaluate student progress and align the MOOC with IVET standards.
7. **Additional Resources and Self-Study** (Sections 11–13): Access supporting materials for diverse learner needs and professional development.

13.1 Estimated Time to Prepare

The preparation and study time vary depending on 1) the depth of the module, 2) the previews knowledge and skills, and 3) the time dedicated to each activity. However, follow some realistic estimation that can support teaching staff in organizing their activities.

- **Total MOOC Workload:** Each of the main modules represents approximately 1 ECTS (European Credit Transfer and Accumulation System), which equates to 25–30 hours of lessons and individual study.
- **Unit Preparation:** Most individual units (e.g., Units 1.1, 1.2, 2.1, etc.) require approximately 1 hour and 30 minutes of active engagement, consisting of:
 - 60 minutes for a lecture.
 - 30 minutes for discussion.
- **Additional Study:** Each unit also recommends approximately 20 minutes of videos and 100 minutes of readings and exercises for full comprehension.

13.2 Reflection Questions for Trainers

Follow some reflection and discussion questions designed to help trainers navigate the ethical and practical complexities of AI in Advertising.

- How can this MOOC support your learners?
 - By shifting the focus from "how to code" to "how to apply" AI in professional advertising domains.
 - By helping students transition from repetitive task-taking to high-level strategic oversight through predictive analytics and creative automation.
 - By ensuring graduates can handle sensitive consumer information responsibly through mastery of AI-driven data governance and ethical targeting.
- Which use cases are most relevant to your context?
 - Personalized Advertising (The Precision Paradox): Balancing high-performing automated ads with brand reputation and consumer well-being.
 - Compliance and Recruitment: Managing the pursuit of fair algorithms and ethical data use in hiring processes.
 - Generative Simulations and ROI: Addressing professional unease regarding "black box" simulations used to predict return on investment.
- General Pedagogical Reflection Questions:
 - How does AI improve efficiency in your specific vocational sector, and what are the associated risks?
 - What role do humans still play when AI operates at a speed and volume that defies manual review?
 - What ethical responsibilities do professionals have when AI-generated results are inaccurate or biased?

14. Appendices - Ready-to-Use Workplace Templates

14.1 Appendix A: Bloom's Taxonomy

Level	Key question answered	Example action verbs
1 — Remember	Can students recall information?	define, identify, list, name, recall, recognise
2 — Understand	Can students explain ideas?	describe, explain, summarise, classify, paraphrase
3 — Apply	Can students use knowledge?	use, demonstrate, implement, solve, illustrate
4 — Analyse	Can students break down concepts?	compare, differentiate, examine, organise, deconstruct
5 — Evaluate	Can students judge or critique?	assess, justify, critique, defend, recommend
6 — Create	Can students produce something new?	design, develop, construct, compose, produce

14.2 Appendix B: Example of a Constructive Alignment Table

Learning Objective	Bloom's Level	MOOC Section(s)	Classroom Activity	Assessment Method
Explain key AI concepts in the sector	Understand	Section 5	Discussion / Q&A	Quiz / oral check
Identify relevant AI tools	Apply	Section 4 & 7	Use-case analysis	Assignment / report
Analyse an AI-supported scenario	Analyse	Section 7	Group exercise	Group project / rubric
Evaluate ethical implications	Evaluate	Section 6	Role-play / debate	Presentation / peer review
Design a simple AI-assisted workflow	Create	Section 8	Project work	Portfolio / demonstration
Learning Objective	Bloom's Level	MOOC Section(s)	Classroom Activity	Assessment Method