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Register

AI Training: State of the Art

2 days (14 hours)

Presentation

Who would have wanted to understand how search engines, social networks, or e-commerce worked in 2002? If you are one of those people who want to anticipate the impact of technologies that are revolutionizing the world, then you have your answer. Artificial intelligence has been the hot topic in recent years, and understanding what it is and what it entails is becoming a real skill to have. Whatever your industry, your aspirations, or your profession, understanding this trend will be key.

Artificial intelligence is a booming market, with nearly 1,000 start-ups worldwide, and it will be worth \$60 billion by 2025. This revolution will have an impact on all economic sectors, but also within every department of a company: marketing, HR, customer service, R&D, etc. It is forcing companies to adapt to these new uses by offering new services such as virtual agents and chatbots, connected objects and environments, robots, natural language processing, UX and process automation, etc.

Many executives are currently asking themselves: What are the challenges for your business? What is the outlook for the coming years and how can you support this transition? With so many technologies and applications available for your business, it can be difficult to see clearly. However, by integrating AI into your applications, you can gain certain decisive competitive advantages: improved conversion rates, closer customer relationships, increased productivity, and more. This new disruption is a real break with the Old World, giving way to new strategic innovation challenges.

In our training course, which covers the state of the art in artificial intelligence around the world, you will explore major existing projects, new applications, and their contributions in order to identify potential benefits for your industry and new opportunities that will arise in the near future. Our training course will introduce you to the main approaches to smart digital transition and give you the keys to tackle the governance of artificial intelligence in companies in a concrete way. From machine learning to deep learning, classification, and generation, we will demystify one of the greatest advances of the 21st century.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Know and understand artificial intelligence (AI)
- Learn about the applications and potential benefits of its use by profession, activity, or sector
- Identify the main AI solutions, tools, and technologies
- Understand the keys to success for an artificial intelligence solution
- Identify the challenges of AI (particularly legal and ethical)
- Understand the difference between machine learning and deep learning
- Integrate AI into your business and understand the challenges of its governance
- Learn about the current state of the art and research

Target audience

Managers, project managers, technical directors, sales, marketing, HR, innovation directors...
Anyone interested in the impact of this technology on the future of employment.

Prerequisites

In-depth general knowledge of IT

Teaching

- Reverse engineering
- Flipped classroom
- Workshops
- AI entrepreneurs live sessions
- Data scientists live coding sessions

To go further

- We offer exclusive training on [TensorFlow & Deep Learning](#)
- In addition, Facebook's [Pytorch](#) technology

AI training program: State of the art & advanced uses

[Day 1 - Morning]

Fundamentals of artificial intelligence

- Definition of artificial intelligence
- Difference between traditional computing and AI
- Deterministic programming vs. data learning
- Concepts of models, data, training, and inference
- Overview of the main types of AI
- Simple examples to understand key mechanisms

[Day 1 - Afternoon]

Machine learning and deep learning

- Principles of Machine Learning
- Supervised and Unsupervised Learning
- Regression, classification, and predictive models
- Introduction to Deep Learning
- Role of Neural Networks
- Strengths, limitations, and biases of models

The rise of generative AI

- Definition of Generative AI
- Text, image, audio, and code generation
- Large language models (LLMs)
- Reasons for recent democratization
- Accessible and concrete use cases
- Impacts on professional practices

[Day 2 - Morning]

AI agents and automation

- Reactive AI vs. autonomous agents
- Concepts of task planning and execution
- Difference between chatbots and AI agents
- Business process automation
- Examples of business uses
- Organizational and operational challenges

[Day 2 - Afternoon]

Weak AI, strong AI, and research

- Definition of weak AI
- Limitations of current systems
- Concept of strong AI and general intelligence
- Areas of research and recent advances
- Scientific reality vs. marketing hype
- Technological maturity horizon

Challenges, impacts, and prospects

- Ethical and regulatory issues
- Bias, reliability, and explainability of models
- Impacts on professions and employment
- Governance and responsibilities
- Legal frameworks and regulations
- Short- and medium-term prospects for change

2-day add-on module: Advanced technologies and uses of artificial intelligence

[Day 3 - Morning]

Overview of approaches to artificial intelligence

- Symbolic AI and rule-based systems
- Statistical and probabilistic methods
- Machine learning and automatic learning
- Reinforcement learning
- Use cases associated with each approach
- Strengths and limitations of existing paradigms

[Day 3 - Afternoon]

Learning models and techniques

- Supervised and unsupervised learning
- Classification, regression, and prediction
- Artificial neural networks
- Specific features of deep learning
- Data quality, volume, and preparation
- Key factors in model performance

Tools, data, and infrastructure

- Strategic role of data
- Computing and cloud infrastructures

- AI frameworks and platforms
- From POC to industrialization
- Scalability and performance
- The role of open source in the AI ecosystem

[Day 4 - Morning]

Generic AI applications

- Natural language processing
- Computer vision and image analysis
- Conversational assistants and agents
- Recommendation systems
- Anomaly and fraud detection
- Cross-functional use cases

[Day 4 - Afternoon] Sector-

specific applications

- Healthcare, industry, and predictive maintenance
- Marketing, sales, and customer relations
- Finance, insurance, and risk management
- Media, content, and assisted creation
- Public sector and security
- Adaptation to specific business needs

AI, business, and organization

- Launching and structuring an AI project
- Evaluating solutions, publishers, and partners
- Skills, talent, and internal organization
- Measuring value and ROI
- Roadmap and overall AI strategy
- Key success factors and points to watch

Companies involved

This training is aimed at both individuals and companies, large or small, wishing to train their teams in new advanced IT technology or to acquire specific professional knowledge or modern methods.

Placement at the start of training

The placement test at the start of the training course complies with Qualiopi quality criteria. Upon final registration, learners receive a self-assessment questionnaire that allows them

assess their estimated level of proficiency in different types of technologies, as well as their expectations and personal objectives for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could be problematic for the monitoring and smooth running of the training session.

Teaching methods

Practical training: 60% practical, 40% theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

Validation

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been correctly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training course.