European Commission

#DSM

Digital Single Market

ARTIFICIAL INTELLIGENCE FOR EUROPE

1. WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial intelligence (AI) refers to systems that show intelligent behaviour: by analysing their environment they can perform various tasks with some degree of autonomy to achieve specific goals.

Mobile phones, e-commerce tools, navigation systems and many other different sensors constantly gather data or images. AI, particularly machine-learning technologies, can learn from this torrent of data to make predictions and create useful insights.

2. WHY IS IT IMPORTANT?

Artificial intelligence can significantly **improve people's lives** and bring major benefits to our society and economy through **better healthcare, more efficient public administration, safer transport, a more competitive industry and sustainable farming.** AI can be used to make more accurate and faster medical diagnoses, carry out dangerous and repetitive tasks and free up valuable time. It can also help in the fight against cybercrime and minimise the use of electricity.

- Reduce use of pesticides and need for irrigation
- Detect pollution and oil leaks in the seas and oceans
- Reduce trauma after surgery
- Help surgeons operate more precisely
- Faster and more accurate diagnosis of diseases
- Fewer traffic accidents
- Better use of energy and water resources
- Less risk of work-related injuries
- Intelligent products that improve access to education
- Smart machines that minimise their environmental impact

By 2025 the economic impact of the automation of knowledge work, robots and autonomous vehicles will reach between €6.5 and €12 trillion annually.

Europe is behind in private investments in AI: €2.4-3.2 billion in 2016, compared to €6.5-9.7 billion in Asia and €12.1-18.6 billion in North America.

3. WHAT IS THE EU'S ROLE IN ARTIFICIAL INTELLIGENCE?

A European approach on AI will boost the European Union's competitiveness and ensure trust based on European values. It is based on 3 pillars:

1. Boosting Europe's scientific base, technological know-how and industrial capacity
2. Preparing for socio-economic changes brought about by AI
3. Ensuring an appropriate ethical and legal framework

The creation of a Digital Single Market, including the free flow of data across borders, is key for the development of AI.

4. HOW MUCH IS THE COMMISSION INVESTING IN AI [2014-2020]?

The European Commission has already invested significant amounts in AI, cognitive systems, robotics, big data and future and emerging technologies to help Europe be competitive:

AI-RELATED AREAS

Around **€2.6 billion** over the duration of Horizon 2020 on **AI-related areas (robotics, big data, health, transport, future and emerging technologies).**

ROBOTICS

€700 million under Horizon 2020 **+ €2.1 billion** from private investment in **one of the biggest civilian research programmes in smart robots in the world.**

SKILLS

€27 billion through European Structural and Investment Funds, on **Skills development** out of which European Social Fund invests, **€2.3 billion** specifically in digital skills.

The expert group on artificial intelligence will help with the implementation of the Communication on "Artificial Intelligence for Europe", support the set-up of a community of stakeholders - the AI Alliance - and draft AI ethics guidelines.

PROJECT EXAMPLES

AGRICULTURE

AI can improve the process and minimise the use of fertilisers, pesticides and irrigation and provide better productivity, food and reduce environmental impact.

Trimbot2020

The project develops an intelligent gardening robot which can trim hedges, roses and bushes.

Contribution: €5.4 million

MARS

Mobile robot that plants seeds while workers monitor the process from anywhere.

Contribution to all ECHORD++ experiments: €19.7 million

DATA & EHEALTH

AI can recognise a cardiac arrest during emergency calls faster and more frequently than the medical dispatcher.

BETTER

Earth observation through big data and machine learning to forecast risk scenarios.

Contribution: €1.9 million

KConnect

Multi-lingual text and search services that help people find the most relevant medical information available.

Contribution: €3 million

PUBLIC ADMINISTRATION AND SERVICES

AI can provide early warnings and prevent natural disasters; or simulate contagion in pandemic events to save human lives.

SIMPATICO

Personalise and simplify public e-services so citizens can easily understand and interact with their public administration.

Contribution: €3.6 million

SmokeBot

Civil robots support fire brigades in search and rescue missions to perform in harsh conditions.

Contribution: €3.8 million

TRANSPORT

AI can minimise wheel friction of a suspended train against the track while maximising the speed and impact and enables autonomous driving.

VI-DAS

Automated sensors detect possible dangerous situations and accidents. The driver is alerted and road safety is improved.

Contribution: €6.2 million

Transforming Transport

Data-driven transformation which will solve urban mobility issues, develop smart motorways, proactive rails and much more.

Contribution: €14.6 million

MANUFACTURING

AI can predict maintenance and breakdowns in smart factories to improves work experience.

SATISFACTORY

Collaborative and augmented-reality system to increase work satisfaction in smart factories.

Contribution: €4 million

SERENA

AI techniques to predict maintenance of industrial equipment.

Contribution: €5.5 million

Updated 24/04/2018