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European Commission (CNECT)

AI Office: AI for health and life sciences

ENABLING DATA-DRIVEN INNOVATION IN HEALTH: OPPORTUNITIES, CHALLENGES AND EU ACTIONS

Co-funded by the European Union

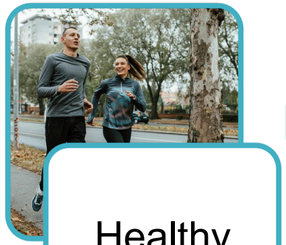
EUROPEAN ALLIANCE FOR PERSONALIZED MEDICINE

Digital technologies and AI in healthcare: a triple win

Improving the **health and quality of life** of citizens

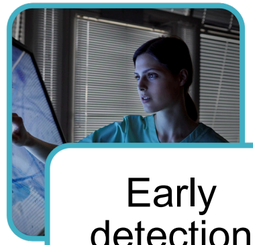
Supporting the **long-term sustainability** and **efficiency** of healthcare and social systems

Enhancing the **competitiveness** of EU industry



Healthy living

Prevention



Early detection and diagnosis

Treatment and care

Follow-up and quality of life

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Potential of AI in healthcare and biotech

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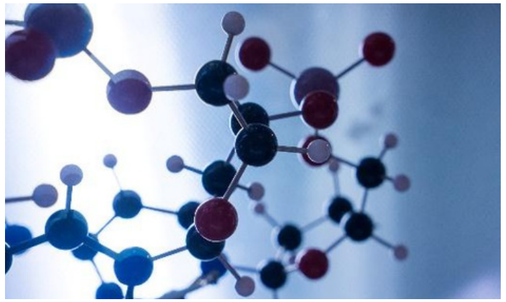

Patient monitoring	Imaging and radiology	Clinical decision support
Efficient clinical workflows	LLMs as healthcare assistants	Personalised medicine
Identification and repurposing of medicines	Human protein analytics	Drug target identification

Pre-requisites for development & uptake: high-quality data, evidence on utility, risk and bias mitigation, economic and ethical/legal pathways

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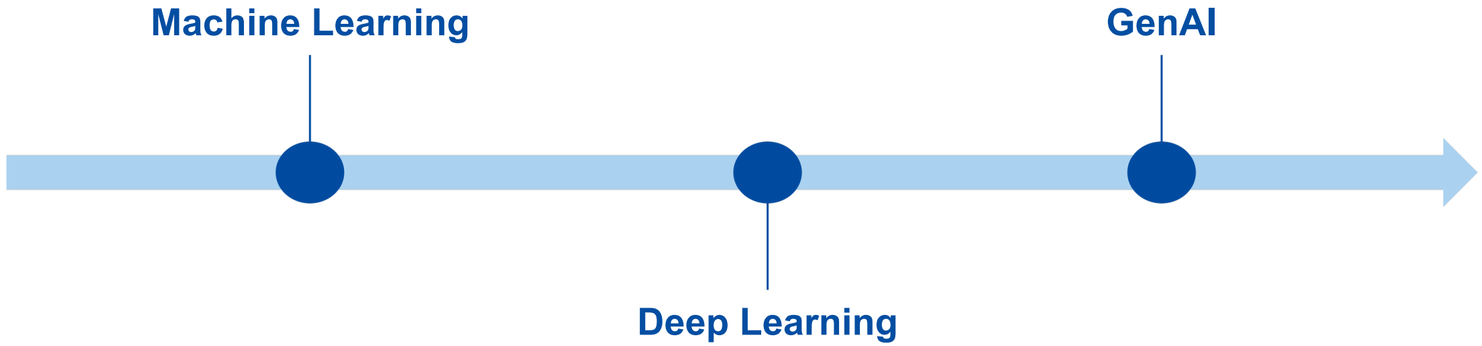
Challenges

Rapid evolution



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- Privacy preservation
- Is workforce prepared?
- Costliness of personalisation
- Data quality and availability
- Understanding added value with evidence
- Adoption and integration

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Von der Leyen Commission 2024-2029: political guidelines

Europe needs a data revolution.

I want Europe to make the most of the biotech revolution. Biotechnologies, supported by AI and digital tools, can help modernise entire parts of our economy, from farming and forestry, to energy and health.

We will also step up our work on **preventive health**, in particular for mental health, including at work, and cardiovascular diseases, as well as on treatments for degenerative illnesses and research on autism. This will build on the successful model of the Beating Cancer Plan.

We will step up our investment in the next wave of frontier technologies, in particular supercomputing, semiconductors, the Internet of Things, genomics, quantum computing, space tech and beyond.

We will also develop with Member States, industry and civil society an **Apply AI Strategy** to boost new industrial uses of AI and to improve the delivery of a variety of public services, such as healthcare.

In order to make it easier to bring biotech from the laboratory to factory and then onto the market we will propose a new **European Biotech Act** in 2025.

This will be part of a broader **Strategy for European Life Sciences** to look at how we can support our green and digital transitions and develop high-value technologies.

To support the development of AI and other frontier technologies, **Europe needs to exploit the untapped potential of data.**

We must also do more to protect the security of our health systems, which are increasingly the target of cyber and ransomware attacks. To improve threat detection, preparedness and crisis response, I will propose a **European action plan on the cybersecurity of hospitals and healthcare providers in** the first 100 days of the mandate.

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New Commission 2024-2029: mission letters

- **Henna Virkkunen (FI):**
  ExecutiveVice-President for Tech Sovereignty, Security and Democracy

- You will intensify our efforts and investments concerning the **next wave of frontier technologies**, in particular supercomputing, semiconductors, the Internet of Things, genomics, quantum computing, space tech and beyond.
- You will present a **European Data Union Strategy** drawing on existing data rules to ensure a simplified, clear and coherent legal framework for businesses and administrations to share data seamlessly and at scale, while respecting high privacy and security standards.

- **Olivér Várhelyi (HU):**
  CommissionerforHealth and Animal Welfare

- You should work to complete the **European Health Data Space**. You will promote the uptake of artificial intelligence, notably through clear and timely guidance on its use in the lifecycle of medicines. You will make proposals to **scale up genome sequencing capacities**.

- **Ekaterina Zaharieva (BG):**
  Commissioner forStartups, Research and Innovation

- You will lead on the preparation of a new multi-disciplinary **Strategy for European Life Sciences**, to unlock high-value technologies in support of green and digital transitions. You will contribute to the **EU Biotech Act** and the updated bioeconomy strategy.

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AI Continent Action Plan

April 2025

1. Building large-scale **AI data** and **computing** infrastructures across Europe for the AI ecosystem

   AI Factories, AI Gigafactories

2. Unlocking access to high-quality **data** for AI innovators

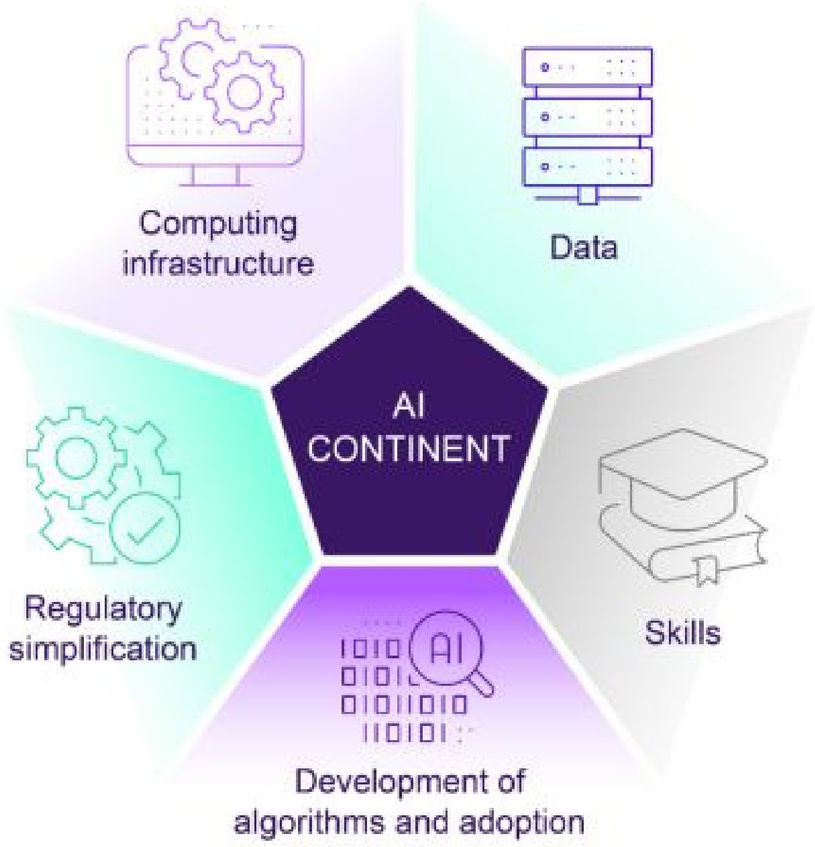
   Data Union Strategy, Data Labs

3. Fostering innovation and accelerate **AI adoption** in strategic EU sectors

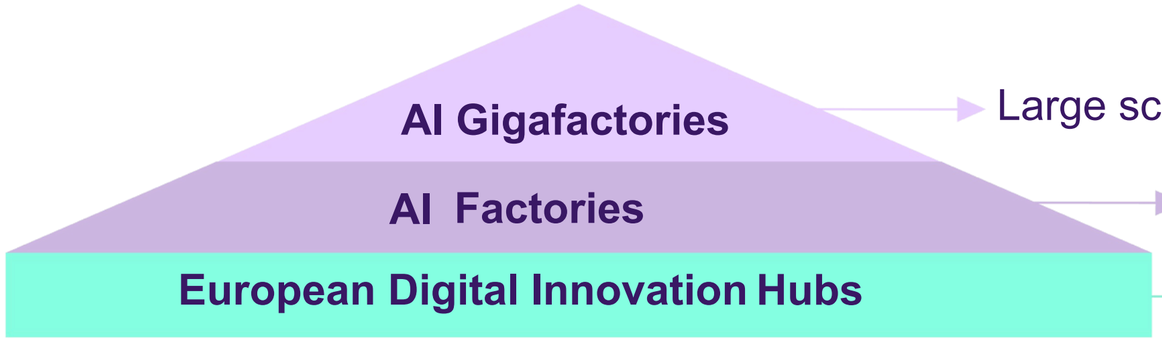
   Apply AI Strategy

4. Building a strong **AI talent base**, reinforcing skills, attracting and retaining talent from outside the EU

5. Fostering regulatory **compliance** and **simplification**



Apply AI Strategy for health



Large scale facilities for the training of frontier AI models

Leveraging supercomputing, data and talent for the AI ecosystem

Supporting AI adoption in organisations

Industrial sectors

Public sector (incl. Healthcare)

Scienc e

Single Market for

Apply AI Strategy will cover the way EU strategic sectors will benefit most from AI solutions

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Leveraging health data infrastructures

1+ Million Genomes Initiative

Cancer Imaging Initiative

Virtual Human Twins Initiative

European Health Data Space

High-quality health data for R&D and healthcare innovation

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Considerations

- **Opportunities** are clear, but **challenges** are big (apparently): regulation vs. rapid tech progress, trust, skills, data availability/quality

- **Access** to innovative healthcare vs. access to data: ethical and legal aspects, individual vs. national vs. EU level, example EHDS

- Investments by **private vs. public sector** – infrastructure, data, products, skills: example AI Continent action plan

- Generation of **evidence**: clinical utility, economic impact