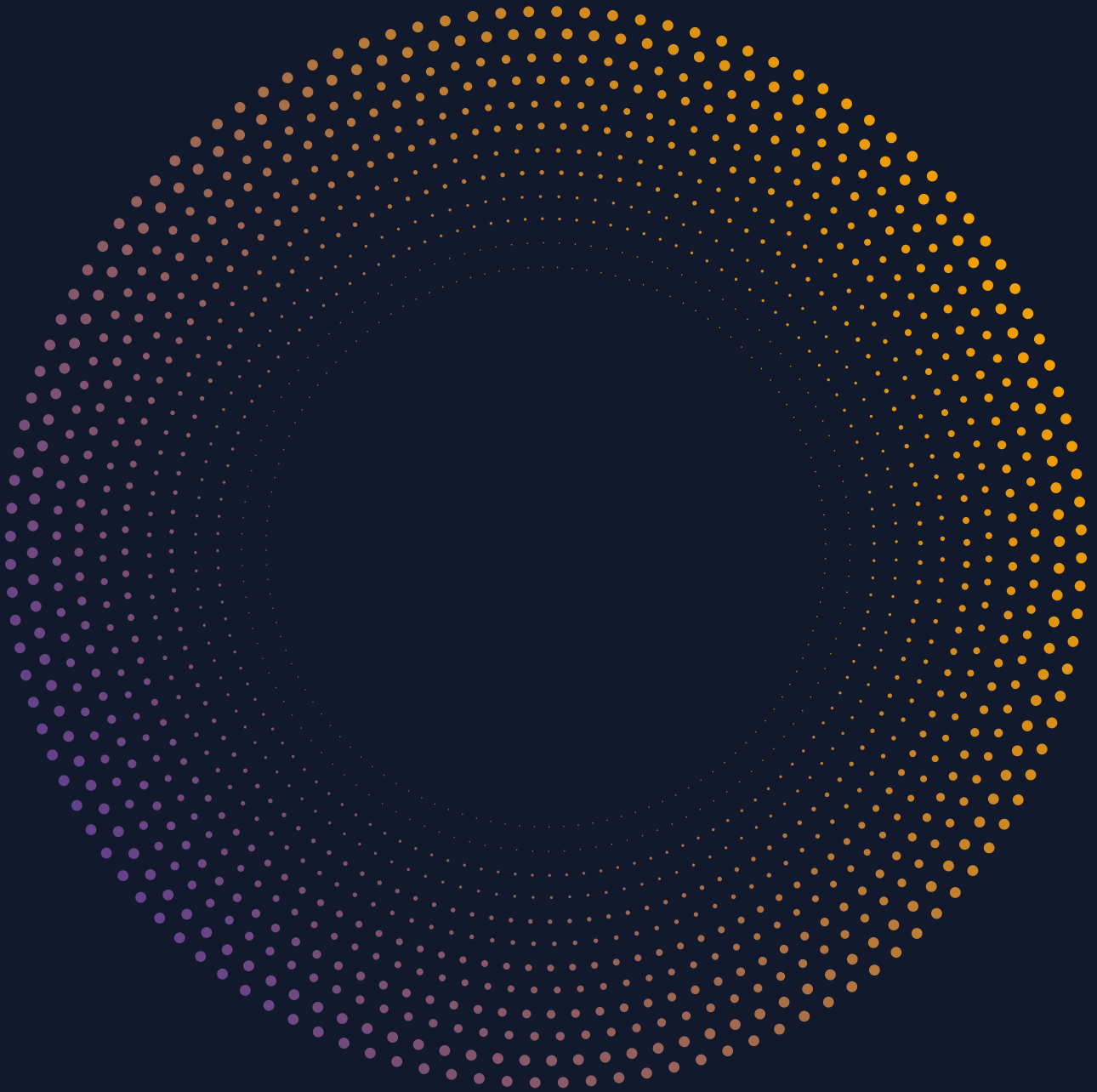


# AI for the Media Industry

## **A Strategic Research Agenda**

### **from the AI4Media consortium**





This document is an excerpt of the AI4Media Strategic Research Agenda on AI for the Media Industry, which is available [here](#).

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# Executive Summary

AI4Media's vision is that of a **European Network of Excellence in Artificial Intelligence for the Media, Society and Democracy** that will glue together the pieces of the currently fragmented European AI landscape and promote a unique brand of European Media AI. AI4Media will build a network of experts, including both leading researchers in media AI from academia and research as well as top European media companies that use AI to enhance their operations and business opportunities. Together, they will address significant technical, legal, ethical and application challenges, aiming to address pressing needs of the media industry and significant societal problems.

The Media are already benefiting from AI advancements and AI-driven applications that can significantly facilitate, enhance or transform important tasks, including smart assistants, smart recommender systems, content personalisation, automatic content creation, multi-modal content search, multilingual translation, disinformation and manipulated content detection, social media analysis and trend detection, online debate analysis, forecasting and decision support-systems, and many more. Further **advances in AI have the potential to transform the media industry** and revolutionise how operations run and how content is created, delivered and consumed while they can also offer trustworthy solutions with a societal impact, aiming to improve political participation, increase social cohesion, equip citizens against disinformation, and encourage healthy debates and social interaction.

To realise this enormous potential of AI will require breakthroughs in several domains such as:

- **Machine learning (ML)**, aiming to address important challenges of current ML techniques, including learning with few data, learning on-the-fly, transfer of knowledge and optimal AI architectures. In addition, research should also focus on distributed AI systems running on heterogeneous devices but also disruptive technologies currently at the laboratory stage such as Quantum-assisted Reinforcement Learning.
- **Content-centered AI technology**, valuable for the media industry and marketable as end-user services, such as multimedia metadata extraction, summarisation, and clustering, automatic audiovisual content generation and enhancement, linguistic analysis, and media-specific core technologies to improve learning performance.
- **Human and society-centered AI technology**, to equip citizens and media professionals with a set of tools that can be used to counter the effects of media manipulation and disinformation, enhance the understanding of online debates, support the analysis of perceptions of social media and the effects of online data sharing, and improve local news understanding without being limited by language barriers.
- **Trustworthy AI techniques**, that aim at providing a framework for the development of the technologies mentioned above that guarantees their suitability with respect to democratic and ethical values. Research should focus on issues of robustness against threats and malicious attacks, explainability of AI decisions, fairness and mitigation of bias of AI models, and techniques for privacy-preserving AI.

These AI advances will be integrated and evaluated in **real-world use cases**, aiming to address significant challenges currently faced by different media industry sectors and to highlight how AI applies throughout the media industry value chain, from research and content creation to production, distribution, consumption/interaction, performance and quality measurement. The use cases cover a variety of media and societal topics such as **disinformation, news research and production, organisation of media archives and content moderation, game design, human-machine artistic co-creation, and social science research.**

In parallel to delivering the next generation of AI research at the service of media, AI4Media aims to establish a **Media AI Observatory** to monitor the legal and technological landscape as well as the impact of media AI on the society, economy and democracy. The Observatory will provide an overview of the existing EU policy and legal initiatives and their impact on future AI research for the media industry, will analyse ethical, societal, environmental and economic concerns, and will provide easy access to leading experts in this domain.

Implementing our vision of **AI as a human-centered, trusted, and beneficial enabling technology in the service of media and society**, requires supporting

in practice the next generation of AI talent in Europe by offering opportunities for top AI education and skill development while also supporting entrepreneurship and innovative ideas. To this end, AI4Media will establish the **International AI Doctoral Academy**, a joint ICT-48 instrument to support world-level AI education and training for PhD/postdoc AI researchers. In addition, it will provide **mobility opportunities** for young researchers and media professionals. And lastly, it will fund and **support SMEs, start-ups and research labs** that want to develop innovative applications and research for the Media. These activities will further strengthen the European AI research community.

There is overwhelming agreement that AI will drive the majority of innovation across nearly every industry sector in the next decade. The media industry should be ready to exploit new AI advances but also mitigate possible risks, in order to enjoy the full potential of this technology and transform the industry. The AI4Media Network of Excellence aims to play an important role in this transformation, by bringing together leading research and industry players in this domain to strengthen the competitiveness and growth of the European media industry and increase Europe's innovation capacity in media AI. This Strategic Research Agenda crystallises AI4Media's research and innovation activities to materialise this vision.



## Unique selling point

AI4Media brings together a critical mass of top AI researchers, media professionals, social scientists and legal experts to create a Network of Excellence and a European Powerhouse in Media AI that will deliver the next generation of AI technologies for the Media Industry and will reimagine AI as a human-centered, trusted and beneficial enabling technology that can be used to offer innovative solutions to major challenges facing the media, the society and democracy.

## Next generation AI for the Media

Core research

Real-world applications

Impact of policy & regulations

Societal concerns

Education & training



Multi-modal content



Fact-checking & verification



Monitoring of EU regulatory landscape



Human and Society in the centre



Automated game design



New policy recommendations



New generation of machine learning systems



News production automation



Trustworthy AI solutions



Content moderation



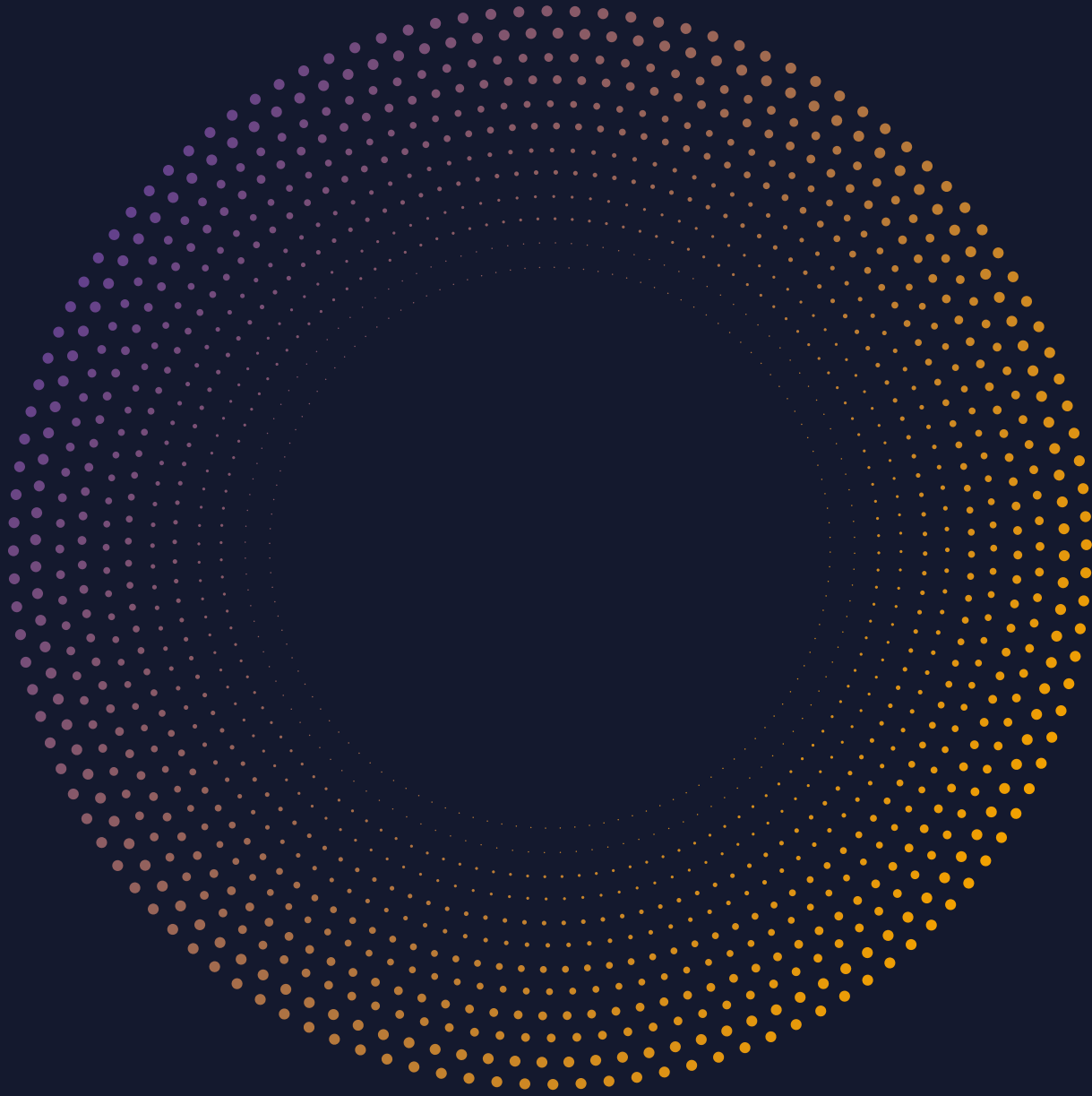
Analysis of media AI impact & societal concerns



Human-machine artistic co-creation



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### Our Consortium



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