Strategy

UKRI AI Research and Innovation Strategic Framework

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Foreword

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Artificial intelligence (AI) is transforming our world at unprecedented speed. It offers major opportunities for economic growth, better health and public services, and new capabilities that extend human potential.

The UK is well placed to benefit. Our strengths are people and partnerships, with world-class researchers and ambitious businesses working together. From the country of Alan Turing and Ada Lovelace, we have a deep tradition in mathematics and computer science that underpins modern AI.

Government investment and strategies give us a clear direction of growth. A national agenda has been set, through the **AI Opportunities Action Plan**, sector plans that include AI across all eight industrial sectors and the national **AI for Science strategy**. Over £1.6 billion of UKRI funding will be directly targeted at the AI sector, which will form only part of our investment in AI as it increases in utility and usage across all our programmes and councils. Through this UKRI AI strategy we will ensure this record investment helps realise the governments vision and provide the foundations for AI driven growth.

At the same time, we have a duty to ensure that AI is deployed safely and effectively, and in a way that maximises benefits to the UK. This will require us to understand and take account of issues such as alignment, environmental impact, malicious use, and appropriate regulation. We will need to keep a keen eye on the UK's strategic advantage and the societal benefits that AI can bring.

UKRI has a critical role: to help the UK seize AI's opportunities and to shape its development so it is safe, secure, responsible and trustworthy. To do this we must work differently, uniting academia, industry, government, communities and the public so that research connects to real-world applications. By backing excellent research, building skills and mobilising partnerships across the UK and internationally, we will turn AI's promise into practical impact high-value jobs, stronger resilience and improved lives.

Our vision

Our vision is a future where the UK develops and fully harnesses the power of AI to drive economic growth, improve lives and livelihoods, and tackle major global and societal challenges.

Our role

UKRI is the linchpin that will turn UK AI research excellence and strength in people into national advantage. We:

- fund groundbreaking research that underpins future AI systems
- build shared national assets
- support innovators and businesses to commercialise and scale AI solutions
- convene universities, industry and government to take ideas from lab to market while embedding responsible, assured AI across the system

UKRI is the only public actor which funds across this entire value chain of skills, infrastructure and technology development; the vital components for driving AI development. We can take a whole-system view to ensure responsible AI and national priorities are integrated beyond market capabilities. By prioritising specific areas, addressing specific market failures and removing development bottlenecks we will invest at scale to drive future national prosperity.

Working in partnership with public and private stakeholders, this strategic framework will allow us to prioritise future investments, align incentives across the system, and give partners a clear roadmap to tangible outputs.

What we will enable

UKRI will make strategic choices focusing investment and effort on interventions, incentives and funding programmes to enable:

- a strong research and innovation community with the full spectrum of skills and the funding to develop, deploy and validate AI, from mathematical concepts and algorithm development, through to development of domain-specific systems and demonstration of new AI products
- widespread, responsible AI adoption that drives economic growth and improves public services, improving lives and livelihoods across the UK
- accelerated commercialisation of AI innovation that drives the growth and scaling of UK AI businesses, creating a vibrant AI sector and real-world products that deliver economic, commercial and societal value nationwide
- a diverse research and innovation landscape which develops, attracts and retains high-quality, globally leading AI talent, strengthening the UK's reputation as a world leader in AI
- an environment in which discovery-led, curiosity-driven research thrives and sustains next-generation AI breakthroughs

How we will act

We will embed clear behaviours across our councils, institutes and facilities.

Output-focused

Invest for tangible results through co-creation and responsible AI adoption.

From ideas to impact

Support the journey from fundamental research to prototypes and scale-up for commercial impact by simplifying programmes and removing barriers.

People first

Build UK-wide skills and talent, both for deep technical expertise and to enable those across domains to adopt and use AI for their needs, creating networks and collaborations that enable transformative AI.

Agile, long-term funder

Balance high-risk high-reward research, safeguard long-term capabilities and address market failures to accelerate adoption.

Cohere and convene

Align programmes, partner with industry and the public sector, and connect discovery to deployment for public benefit.

Our priority areas and outcomes

UKRI will deliver this vision through six priority action areas. In each, we will act as investor, convenor and enabler to achieve ambitious outcomes, directing investments and partnerships to deliver tangible benefits and UK prosperity.

Technology development and future foundations

By 2031:

- UKRI-backed research will position the UK as a global leader in explainable, human-in-the-loop systems, agentic AI, edge computing and sustainable models
- there will be a stronger UK tech ecosystem that accelerates domestic AI champions, anchors those firms in the UK and attracts frontier labs, multinational investment and private capital
- clear mission pathways will exist from algorithms to pilots across priority sectors (such as energy, life sciences, manufacturing, creative industries)

To do this we will:

- invest at scale in the mathematics, computer science and engineering research that underpin new AI systems in areas of UK strength and potential (such as explainable, edge, human-in-the-loop, agentic and sustainable AI)
- run UKRI mission programmes that unite researchers, industry and the public sector to remove adoption barriers and deliver real-world solutions
- maintain and grow research capability across the core disciplines essential to sustain the innovation pipeline (including software development, human-computer interaction, data science)
- fund agile, interconnected critical mass investments and support early-stage AI SMEs (including spin-outs) through to scale-up, to grow capability and attract further private and public investment in coordination with the British Business Bank

AI transforming research

By 2031 there will be:

- faster, reproducible science across disciplines through UKRI-supported national AI testbeds and shared methods
- equitable access to AI tools, data and infrastructure for researchers across the UK via UKRI-enabled platforms
- consortia delivering solutions to global challenges, convened and funded by UKRI

To do this we will:

- deliver the National AI for Science Strategy in partnership with DSIT: investing across DSIT's AI for science priority areas (engineering biology, fusion energy, materials science, medical research and quantum technologies), as well as high potential areas across science, engineering and environmental science

- fund UKRI-backed collaborations, testbeds and platforms so domain scientists and AI experts can tackle previously intractable problems
- share data, techniques and tools across the UK, upskill domain researchers, and study AI's evolving impact on research practice and culture in partnership with the UKRI-DSIT UK Metascience Unit

Developing AI skills and talent

By 2031:

- the UK will grow the R&I workforce to produce more deep technical experts and those who can drive AI companies and research groups
- ongoing continuing professional development (CPD) will equip researchers and adopters in other disciplines to use AI responsibly and effectively across sectors
- inclusive career paths will be commonplace for research software engineers (RSEs), data scientists and ethics specialists, available nationally to widen participation
- there will be greater numbers of commercially fluent, policy-literate leaders across research and innovation mixed with specialists in public engagement and those who can match AI to problem sets

To do this we will:

- expand doctoral and fellowship routes co-designed with industry and linked to UKRI infrastructure access
- incentivise recognised career frameworks and workforce development for technical and specialist staff including RSEs, data scientists and ethics specialists
- invest in CPD and broaden access to UKRI-supported AI training beyond specialist communities
- use UKRI fellowships and industry placements to build inclusive domestic pipelines and attract and retain global talent

Accelerating innovation and adoption for economic growth and societal benefit

By 2031 there will be:

- measurable economic returns from UKRI investments through strengthened commercialisation pathways and venture scaling: UKRI investment ensures UK AI ventures have the impetus and conditions to start, scale and stay in the UK, crowding in private investment, unlocking high-quality jobs, and driving economic growth across regions
- widespread sector diffusion with responsible AI embedded across the Industrial Strategy IS-8 sectors and beyond with measurable productivity gains and regional cluster growth driven by UKRI programmes

- improved resilience with reduced deployment time and cost in NHS, climate, food and energy systems through UKRI-funded testbeds and demonstrators; assured AI strengthens defence, security, and resilience with UKRI coordination

To do this we will:

- identify and support AI companies with scale-up potential through targeted investment, tailored growth support and market-shaping interventions that unlock private capital, accelerate revenue growth, and position the UK as home to global AI leaders
- de-risk adoption by coordinating with regulators, funding sector testbeds and demonstrators, and supporting researcher commercialisation to enable faster routes to market
- scale regionally via UKRI-strengthened clusters linking universities, firms and supply chains, and incentivising co-investment
- identify complementary investments and barriers to investment required to deploy AI successfully, and the policy levers to address them
- incentivise industry and public sector collaboration and co-investment in research and development to tackle systemic challenges (such as climate, health, national infrastructure, and food-energy security)
- accelerate assured AI for mission-critical deployment in infrastructure protection, intelligence and cyber defence in partnership with national security agencies
- collaborate internationally where UKRI can amplify UK advantage and target global priorities such as more environmentally sustainable and trustworthy AI
- fund research into business processes and knowledge exchange across AI adoption, so organisations can adopt responsible AI effectively

Championing responsible and trustworthy AI

By 2031:

- there will be validated, assured systems operating in regulated sectors with demonstrable safety, fairness and accountability, supported by UKRI research and assurance toolchains
- policy, regulation and public trust are adapted to an AI-enabled world underpinned by a stronger evidence base from UKRI-funded studies
- UK will be co-leaders on global standards for safer, greener AI through UKRI international partnerships

To do this we will:

- connect researchers, regulators and adopters to scale validated, trustworthy systems in regulated sectors in single funding programmes

- support research and innovation across technical research (assurance, safety, explainability, bias mitigation), and social measures for effective and responsible deployment
- support UKRI-funded AI projects to develop AI responsibly, with appropriate tools and training, mandated where appropriate
- collaborate internationally, working bilaterally with global partners to shape safe, responsible AI, address global challenges and develop shared standards and operating practices

Building world-class AI-enabling data and infrastructure

By 2031 there will be:

- open, more environmentally sustainable compute and data foundations that provide equitable access to AI research resources through UKRI-enabled infrastructure and new models released based on these resources
- reusable, privacy-respecting datasets and Trusted Research Environments (TREs) that accelerate discovery and ensure data providers benefit from their contributions
- skilled technical teams and responsive facilities operated or supported by UKRI that reduce emissions and improve service

To do this we will:

- deliver the UK Compute Roadmap through UKRI's Digital Research Infrastructure programme and partnership with DSIT to build the AI Research Resource and ecosystem
- invest in AI-ready data, TREs, FAIR (findable, accessible, interoperable and reusable) datasets and governed data services aligned to UKRI strategic needs
- develop skilled teams to run compute, software and data infrastructure and ensure facilities are open and responsive
- align UKRI infrastructure investment with other priority areas to multiply economic and societal value

The future

UKRI will use its convening power and whole-system perspective to build a resilient, internationally connected UK AI research and innovation ecosystem. This will promote cross-disciplinary collaboration, balance competition with openness, and accelerate progress toward our vision. We will create the partnerships, coherence and momentum needed to secure the UK's strategic advantage, capture economic opportunity and improve lives.

UKRI will deliver this strategy, remaining agile to technological, economic and security shifts. We will shortly publish a delivery plan that will be regularly

updated.

We expect AI to become as ubiquitous as statistics or computers; embedded across sectors and meeting the needs of scientists, organisations and the public. Until then, UKRI will drive the development of trusted AI and its responsible adoption across the economy for the benefit of UK residents.

https://www.ukri.org/publications/ukri-artificial-intelligence-research-and-innovation-strategic-framework/ukri-ai-research-and-innovation-strategic-framework