# Isambard-AI launches as UK’s most powerful supercomputer



On a damp morning at Bristol and Bath Science Park, the launch of Isambard-AI—the UK’s most powerful supercomputer—marked a turning point in Britain’s pursuit of AI leadership. Backed by £225 million in government funding and built with Hewlett Packard Enterprise, the system is designed to transform AI research and application across academia and industry.

Powered by more than 5,400 Nvidia Grace Hopper superchips, Isambard-AI delivers 21 AI exaflops of peak performance—enabling tasks that would take the global population 80 years to complete in a second. This leap places the UK among the top tier of European AI infrastructure, ending its reliance on overseas systems for large-scale workloads. The platform is accessible to researchers, startups and SMEs, offering cloud-style ease of use.

A key feature is its support for sovereign, domain-specific AI models built on curated UK datasets across sectors including healthcare, agriculture and legal services. This allows AI systems to align with national regulatory frameworks—vital for ensuring compliant, high-impact innovation.

Real-world uses are already emerging. At the University of Bristol, Dr Jon Lees and his team are using Isambard-AI to map protein interactions central to drug discovery in areas such as Alzheimer’s, cancer and genetic heart conditions. Work that once took decades can now be completed in days.

Elsewhere, the John Oldacre Centre for Dairy Welfare & Sustainability Research is training AI models to monitor cattle behaviour using camera footage. This helps detect illness early, supports animal welfare and reduces antimicrobial use. Similar projects at the University of Southampton and the Rosalind Franklin Institute are applying the system to placental biology research, using AI for 3D imaging segmentation to explore pregnancy outcomes.

Isambard-AI forms part of a wider £900 million government drive to expand the UK’s computing capacity. It is ten times faster than the country’s previous top machine and connects with other major projects like the ‘Dawn’ supercomputer in Cambridge, focused on fusion and climate research.

The system is structured to support both public and private sector users, with government-managed access and pricing aimed at fostering a commercially sustainable ecosystem. Enterprise features include containerised workflows and advanced cybersecurity, creating a secure environment for building and scaling AI models. Nvidia’s VP for Enterprise EMEA described it as a UK-based incubator for business-critical AI solutions.

Environmental sustainability is built in—Isambard-AI is the world’s fourth most energy-efficient supercomputer, cooled by water rather than fans. Waste heat is recycled to warm nearby facilities, extending the system’s impact beyond computation.

With 25 petabytes of flash storage and scalable internet access, Isambard-AI is set to support expanded enterprise collaborations, including in NHS innovation, legal tech and manufacturing. It also enables the training of UK-specific large language models like BritLLM, removing previous constraints faced by researchers. Simon McIntosh-Smith, director of the Bristol Centre for Supercomputing, said: “Isambard isn’t just a machine; it’s a catalyst for everything that follows.” By giving researchers and companies access to world-class computational power, Isambard-AI positions the UK at the forefront of responsible AI development—fueling frontier research and delivering benefits across science, industry and society.

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## Bibliography

1. <https://techinformed.com/isambard-supercomputer-drives-real-world-use-case/> - Please view link - unable to able to access data
2. <https://www.gov.uk/government/news/bristol-set-to-host-uks-most-powerful-supercomputer-to-turbocharge-ai-innovation> - The UK government has announced plans to build Isambard-AI, a supercomputer at the University of Bristol, to drive AI research and innovation. Backed by a £900 million investment, Isambard-AI will be among Europe's most powerful supercomputers, serving as a national resource for researchers and industry experts in AI. The facility aims to enhance the UK's computing capacity and establish it as a leader in AI development. The project is part of a broader initiative to transform the UK's computing infrastructure and support critical work in AI technology.
3. <https://www.bbc.co.uk/news/uk-england-bristol-67296381> - Bristol University has been awarded a £225 million investment by the UK government to create the country's most powerful supercomputer, Isambard-AI. The supercomputer will be ten times more powerful than the UK's current fastest machine and is set to be among the most powerful in Europe. It will be used for scientific discovery in fields such as robotics, big data, climate research, and drug discovery. Hewlett Packard Enterprise (HPE) has been named as the supplier for the project.
4. <https://www.gov.uk/government/news/technology-secretary-announces-investment-boost-making-british-ai-supercomputing-30-times-more-powerful> - The UK government has announced a significant investment to enhance its AI supercomputing capabilities. The funding will bolster Isambard-AI, Britain's most advanced computer, based at the University of Bristol. Isambard-AI is set to be ten times faster than the UK's current quickest machine, thanks to advanced AI chips from Nvidia and a supercomputer built by Hewlett Packard Enterprise (HPE). The investment also includes connecting Isambard-AI to a new supercomputer in Cambridge, named 'Dawn', to target breakthroughs in fusion energy, healthcare, and climate modelling.
5. <https://www.hpe.com/us/en/newsroom/press-release/2023/11/uk-government-invests-225m-to-create-uks-most-powerful-ai-supercomputer-with-university-of-bristol-and-hewlett-packard-enterprise.html> - The UK government has invested £225 million to create the country's most powerful AI supercomputer, Isambard-AI, in partnership with the University of Bristol and Hewlett Packard Enterprise (HPE). The supercomputer will be built with next-generation HPE Cray EX supercomputers and over 5,000 state-of-the-art NVIDIA GH200 superchips, capable of performing 200 quadrillion calculations per second. Isambard-AI will provide researchers and industry with unprecedented computing capacity to drive AI-driven breakthroughs in fields such as robotics, big data, climate research, and drug discovery.
6. <https://www.bristol.ac.uk/news/2025/july/isambard-launch.html> - The UK's most powerful AI supercomputer, Isambard-AI, has been launched at the University of Bristol. Developed through a £225 million investment, Isambard-AI is capable of processing in one second what it would take the entire global population 80 years to achieve. The supercomputer is part of the UK Government's AI Research Resource (AIRR) and is intended to boost the country's capabilities in responsible and cutting-edge AI development. It will be used by researchers and industry to harness the potential of AI in various fields, including robotics, big data, climate research, and drug discovery.
7. <https://www.bristol.ac.uk/news/2024/may/ground-breaking-moment-for-science.html> - The first stage of the Isambard-AI supercomputer service has been launched at the University of Bristol. This phase signifies the start of the Isambard-AI service, with the remaining GPUs set to arrive later in the summer, increasing performance by a factor of 32. The Isambard-AI supercomputer is part of a £225 million investment from the UK Government and is expected to revolutionise research possibilities in the UK, benefiting organisations such as the AI Safety Institute by providing access to one of the most powerful computer systems on the planet.