



Democratising access to digital twin technologies

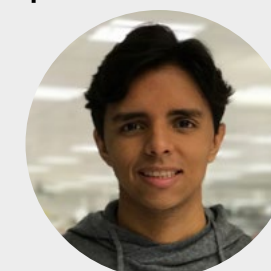
From designing digital tools for farming to building an AI air traffic controller, the Turing has a strong track record in [digital twins](#) – virtual ‘copies’ of physical systems, providing insights, simulation and decision support. In 2023, it cemented its role as a leader and collaborator in this space with the [launch of the Turing Research and Innovation Cluster in Digital Twins](#) (TRIC-DT), set up with £26M of investment to promote wider access to digital twin technologies and realise their benefits across three key areas: infrastructure, health and natural environment.

In the TRIC-DT’s first year, efforts to simulate individual human hearts produced a new, open-source computational tool, [‘AutoEmulate’](#), which is now being generalised out to speed up simulations across multiple disciplines. Collaboration with medical experts is also helping to shape the design of [AI-powered software](#) for building digital twins of patients’ hearts, which could guide clinical decisions. Researchers at Imperial College London used the Turing-created [Trustworthy and Ethical Assurance](#) platform to embed ethical practices into the development of this software. The online platform, featured in 2024 government [guidance on AI assurance](#), was recently funded by UKRI’s Bridging Responsible AI Divides programme to [extend its use in digital twins](#).

Internationally, TRIC-DT researchers collaborated with Australia’s national science agency, the Commonwealth Scientific and Industrial Research Organisation, to explore how novel technologies created to draw insights from climate-related data can better support developing countries. Researchers are working with partners in Vietnam, the Philippines and Indonesia to understand the impact of climate hazards on public health and the digital infrastructure and capabilities needed to respond to these challenges.

Meanwhile, the Turing became the host of a new knowledge-sharing network for digital twins, [DTNet+](#), funded by a £3M UKRI grant. The DTNet+ team is now matchmaking contacts across industry and academia to promote a cross-disciplinary, inclusive network that complements the work of the TRIC-DT.

“The Turing’s Trustworthy and Ethical Assurance platform has been really helpful for us as an introspection exercise. It’s like a big camera for your software development project in terms of fairness and interpretability – it ensures these important aspects are baked into the process, but without interfering with it.”



José Alonso Solís-Lemus
Postdoctoral researcher,
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