University of South Australia | Enterprise Hub

We'll stop at nothing to help you harness digital technology

We help organisations predict tech trends, uncover solutions, and seize opportunities to grow their business.

UniSA is at the forefront of digital technology, Artificial Intelligence (AI) and computing advancements. Our research team has world-leading expertise in:

- **applied AI** — we create ways to model and construct intelligent software systems, fast. We help organisations design and develop systems and processes to enable intelligent decision-making

- **immersive technologies** — we explore the use of augmented, virtual, mixed and spatial realities to enhance user capabilities and create new products, services and experiences

- **machine learning** — we develop machine learning techniques that support explainable and trustworthy AI and its applications

- **data analytics and image analysis** — we enable pattern recognition and detection of anomalous behaviours to develop causal representations of complex systems, and we use visualisation to support reliable decision-making

- **human and artificial cognition** — we explore how cognitive agents intersect with human cognitive processes to develop learning and knowledge while guiding optimal machine–human performance

- **human-centred design** — we improve the human experience by understanding how people live and work within highly technical and complex environments.

When you connect with us, you'll have access to:

- **The Australian Research Centre for Interactive and Virtual Environments (IVE) —** IVE is the largest concentration of mixed reality researchers in Australia and one of the leading groups worldwide. As a multi-disciplinary centre it has extensive capabilities in interface and environment design, neuroscience, psychology, visualisation, training and simulation, and other application areas

- **Industrial AI Research Centre (IAI) —** IAI is at the leading edge of the global revolution in AI, machine learning, industry 4.0 and Internet of Things technologies

- **Centre for Change and Complexity in Learning (C3L) —** C3L is a global leader in learning analytics and AI in education. It focuses on the complex relationships between human and artificial cognition

- **Defence Artificial Intelligence Research Network (DAIRNet) —** DAIRNet's AI researchers stimulate new ideas and evaluate, test, and integrate new AI technologies for defence.

UniSA in action — delivering world-leading data intelligence

BAE Systems Australia and UniSA's partnership:

- developed cutting-edge narrative and data visualisation techniques

- predicted and prevented issues in the manufacturing process

- projected savings of $3 million annually while also reducing build time

- trained and transitioned UniSA data visualisation researchers to industry positions

UniSA collaborated with BAE Systems Australia to deliver data intelligence to the Hunter Class Frigate Program. The program will now produce nine world-class frigates in the coming decade for the Royal Australian Navy.

Shipbuilding at the scale of the Hunter Class Frigate takes time. The complex manufacturing processes, combined with technological advancements and changes in the global environment, make it a challenge to produce state-of-the-art ships quickly and safely. It is critical to be agile and responsive throughout the build.

To help address these challenges, researchers from UniSA's IVE and IAI research centres collaborated with BAE Systems to deliver world-leading manufacturing data intelligence to the program. They developed visualisations of the current and future state of the shipbuild, the shipyard and the supply chain. This innovative technology has revealed future delays and other issues that could occur, allowing decision-makers to minimise any potential negative impact. Modelling has predicted that this technology will save the program $3 million annually.

Augmented and Virtual Reality was also used to produce interactive 3D tabletop visualisations of the end-to-end process, furthering the forecasting and problem-solving capacity of the program.

"The exposure that the IVE team has had to the shipyard and how it works has been invaluable to understanding the problems that exist in industry. This has enabled a more practical approach to providing solutions and to the building of tangible products."

Wendy Bourke
Senior Project Manager - Innovation, Research and Technology, Hunter Class Frigate Program
BAE Systems Australia

Some of our Partners

BAE SYSTEMS   SAAB   Australian Government Defence   MIMOSA   REDARC DEFENCE & SPACE   LOCKHEED MARTIN

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UniSA's Enterprise Hub
World-leading technology and research expertise at your side

We are committed to developing and leveraging digital solutions that solve problems and drive economic, social and environmental change.

The Enterprise Hub can connect you to experts in AI, machine learning, immersive technology, computer science, engineering, architecture, digital design, art, mathematics, industrial design, and psychology. 3,000 expert academics, 30+ world-class research institutes, 37,000+ students and 2,500+ industry partners are within your reach.

We're here to help you find solutions by providing you with access to our experts, cutting-edge facilities, research-backed technology and our talented students and graduates.

Partner with us to uncover the ideas, solutions and connections that will make your business unstoppable.

To learn more, visit www.unisa.edu.au/enterprisehub.

Through the Enterprise Hub you can:

Put unstoppable research teams to work
100% of our research is world-class or above. Imagine what could be possible if our team partnered with yours.

Build your best team
Bespoke training (from a three-hour webinar to a three-year degree), internships, co-located researchers, and access to talent for workforce planning. Our people are our strength, they can be yours too.

Push boundaries with access to state-of-the art equipment, systems, and places
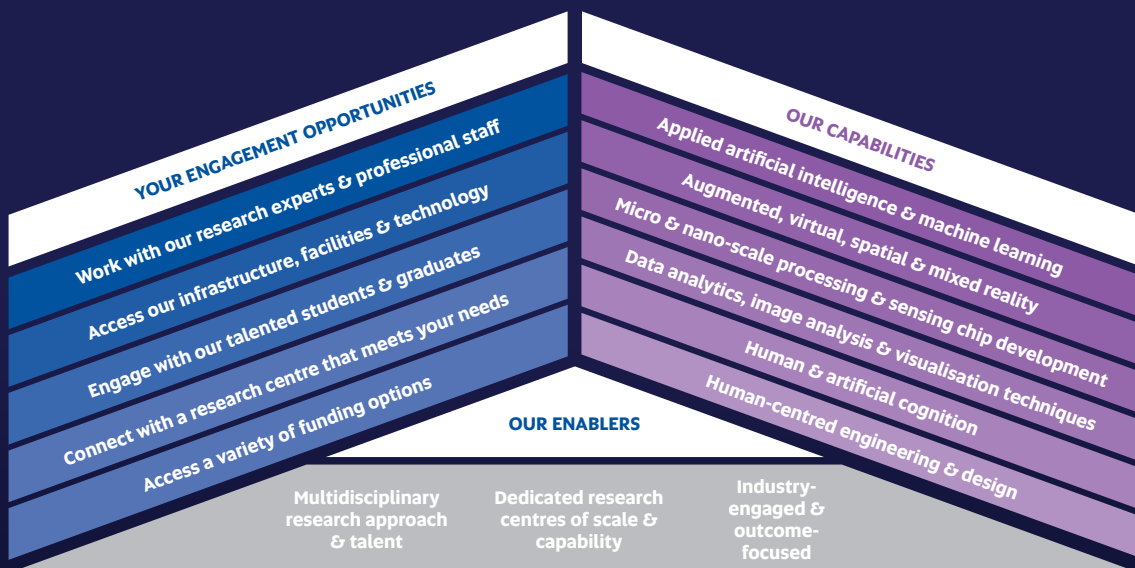Our doors are open. Access technology and resources out of commercial reach and unlock your organisational potential.

Explore unexpected connections
We're nurturing more than 6,500 relationships and 2,500 partnerships in a creative and collaborative space. Be part of our global ideas network that's breaking with tradition.

Develop and enhance your technology-enabled product or service with UniSA

YOUR ENGAGEMENT OPPORTUNITIES
- Work with our research experts & professional staff
- Access our infrastructure, facilities & technology
- Engage with our talented students & graduates
- Connect with a research centre that meets your needs
- Access a variety of funding options

OUR CAPABILITIES
- Applied artificial intelligence & machine learning
- Augmented, virtual, spatial & mixed reality
- Micro & nano-scale processing & sensing chip development
- Data analytics, image analysis & visualisation techniques
- Human & artificial cognition
- Human-centred engineering & design

OUR ENABLERS

Multidisciplinary research approach & talent	Dedicated research centres of scale & capability	Industry-engaged & outcome-focused

"Our world is shaped by technology. It's not just about solving problems, it's about new products and services that complement and enhance the society in which we live. At UniSA, our researchers, our technology and our facilities are delivering the capabilities of tomorrow. We understand what the future looks like and we can help you navigate it." - Dino Rossi

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