



Research Translation & Impact

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Bridging the gap between
academia and industry

An industry focused, R&D innovation hub,
delivering engineering and technology
solutions for industry and social impact



Delivering Research Impact

Accelerating the translation of academic research into real-world outcomes is a natural progression for us. We support researchers to move beyond discovery into development, deployment and impact.

UTS Rapido supports research translation by providing the engineering and digital capability to turn research into practical, scalable solutions. Our expertise will focus on business model scaling and wide commercial adoption.

Partners in Translation

We speak the language of business, not just research. We understand the pace, pressures and practical realities of commercial R&D because we've worked in it ourselves. We also recognise the value of meaningful university collaboration and translating valuable research into actionable impact.

Our engineers, software developers, UX specialists and project managers work alongside UTS researchers to scope, manage and deliver innovation tailored to real-world needs.



Hervé Harvard
Executive Director
UTS Rapido

We work with researchers who are ready to take the next step, turning validated insights into usable technology.

Our role is to reduce friction, add capability and deliver the engineering, technology and design expertise needed to create robust, scalable, and market-ready solutions.

Whether it's a prototype, a pilot deployment or a commercial product, we help transform research into measurable impact.

UTS collaboration for impact

We are part of the university. When you work with us, you're partnering with colleagues who understand the research environment and share a commitment to delivering impact. We bring complementary expertise in technology development and in translating research into meaningful outcomes.

Our flexible, outsourced R&D model combines applied research, technical development and end-to-end project delivery.

From concept to impact: Bridging research and application

Our role is to extend research with the technical and engineering expertise needed to translate concepts into usable, scalable technology.

We combine advanced AI, software development, mechanical and mechatronic engineering, digital and design expertise into advanced stage research.



How UTS Rapido can help

We help navigate a world-class, multidisciplinary teams of engineers, UX specialists, AI experts, software developers, and project managers. Plus we aid access to the facilities, tools and research expertise of the wider UTS innovation ecosystem.

- Develop advanced software solutions.
- Engineer ready-to-manufacture hardware.
- Identify the needs and behaviours of the end users to maximise success.
- Identify product opportunities and align to user and business needs.
- Advance early-stage research into higher-TRL proofs of concept and prototypes.
- Strengthen grant proposals with high-TRL development capability.

What TRL levels do we support?

Technology Readiness Levels (TRLs) are a globally recognised scale used to assess how close a technology is to being deployed in the real world.

UTS Rapido supports research translation from mid to high TRL levels, helping researchers move from proof-of-concept to pilot-ready solutions.

Whether you're preparing for clinical trials, market entry, or licensing, we ensure your innovation is built for use, not just theory.

Early stages:

- TRL 1–3: Research and theoretical work, often lab-based

Development stages:

- TRL 4–6: Proof of concept and prototype development in simulated, or real environments

Deployment stages:

- TRL 7–9: Demonstration, validation and full-scale implementation in operational settings

Technology readiness level (TRL) scale

Early stages (TRLs 1-3)

Development stages (TRLs 4-6)

Deployment stages (TRLs 7-9)

Basic technology research

Concept research

Problem/solution fit

Business model scaling

Wide commercial adoption



Case study: Predictive UTI screening for spinal injury patients



Australian Institute for Microbiology and Infection

Co-designing a predictive UTI screening solution to reduce antimicrobial resistance

Need:

Patients with spinal cord injuries who rely on catheters are highly susceptible to urinary tract infections (UTIs). Diagnosing these infections is complex, as clinicians must differentiate between symptomatic and asymptomatic cases. Incorrect diagnosis can lead to unnecessary antibiotic use, which contributes to resistance and worsens patient outcomes.

Innovation:

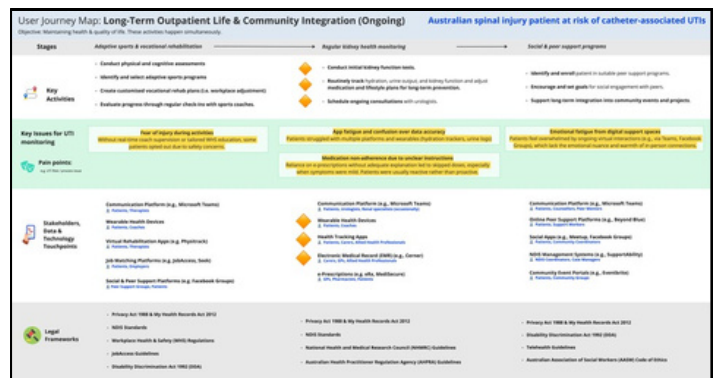
UTS Rapido worked with AIMI researchers, clinicians, and the UTS Research Office to explore how a machine learning method could support early and accurate UTI diagnosis. Our team led the UX research and co-design phase, mapping the patient journey and clinical workflows to inform product development.

Outcome:

We defined requirements for a real-time pathogen reporting system and identified a priority phase for pilot deployment.

Key activities:

- Stakeholder and patient journey mapping.
- Ethics approvals and field research at Prince of Wales Hospital, NSW.
- Identifying workflow and regulatory challenges.
- Designing a decision support interface for clinicians.



UX Research: Sample user journey map

Funding: UTS Grant, Lead CI: Prof. Diane McDougald

Case study: Coral research bath for reef restoration



Developing a modular phenotyping system to accelerate coral resilience research

Need:

To address the impact of climate change on coral reefs, a compact coral bath device was needed to support high throughput thermal testing to assess coral resilience under thermal stress.

Innovation:

Modular, 16 coral bath system that is the next generation of phenotyping equipment, linked to fluorometry and oxygen measurement capability, to help test and characterise thermal resilience of different coral species.

Key activities:

- Co-design and prototyping with researchers.
- Engineering transportable, multi-taxa system.
- Integrating sensors and software for field use.
- Testing and iteration for remote deployment.

Outcome:

Transformative capability for UTS and the Future Reefs team for high throughput coral experimentation with refined control on key abiotic parameters such as temperature and nutrients.

The system is now being used to support reef restoration research and has potential for broader global deployment.

Funding: UTS Grant, Lead CI: Dr Emma Camp



The Future Reefs team continues to adopt advanced technologies to better preserve and rebuild healthy reefs.

This new system will transform our team's capability to do high-throughput coral experimentation with refined control on key abiotic parameters such as temperature and nutrients.

Dr Emma Camp, Team Leader, Future Reefs Program

Case study: AI governance for responsible digital health



Australian Government
Department of Health, Disability and Ageing



Adapting global AI governance for safe and scalable use in Australian healthcare

Need:

AI systems are being adopted across the health sector, but without clear governance frameworks, there is a risk of misuse, bias, and regulatory failure. Policy makers need structured tools to assess AI solutions in line with local health objectives and global ethical standards.

Innovation:

UTS Rapido is contributing UX strategy, systems design, and translation expertise to a national project led by the Department of Health, Disability and Ageing. The goal is to adapt the OECD AI Classification Framework into a practical online tool for Australian policy makers evaluating health-related AI technologies.

Key activities:

- Identifying the workflows, decisions, and risk factors health policy makers face.
- Mapping regulatory, clinical and ethical criteria into the OECD framework.
- Designing a user-friendly tool to evaluate AI systems across risk and benefit dimensions.
- Developing prototypes for stakeholder testing, aligned with national reporting cycles.



Expected outcome:

Once launched, the tool will support safer, more consistent AI adoption in healthcare. It will help Australian decision-makers classify and assess digital health AI systems, ensuring their benefits are evidence-based, aligned with regulation, and built for trust.

Funding: External Grant, Lead CI: Hervé Harvard

Case study: Quokka, the first 30-qubit consumer quantum computer emulator

Translating research into a world-first consumer quantum product



Quokka Quantum

Need:

UTS researchers needed a working prototype to demonstrate how quantum computing could be made accessible to non-specialists.

UTS Rapido was engaged to translate early-stage research into a functional, manufacturable device that could support learning, experimentation and future commercialisation.



Innovation:

Translated a complex quantum emulator onto a Raspberry Pi, built a mobile onboarding app, developed a cloud-based quantum circuit builder, and designed an elegant aluminium enclosure.

Worked with UTS researchers to develop the early Quokka prototype, combining multi-disciplinary R&D expertise.

This multi-disciplinary approach helped transform advanced research into a consumer-ready quantum product, used to learn and experiment with quantum coding.

The Quokka is an affordable, fit-in-the-hand personal quantum computer emulator that can run programming languages written for quantum computing and return results.



We're looking to revolutionise the way people learn about quantum computing and STEM education in general.

The Quokka platform, including the device, is a tool for hands-on learning. It acts as a fault-tolerant quantum computer, unlike other quantum simulators.



Chris Ferrie

Associate Professor, Centre for Quantum Software and Information (QSI)



Outcome:

Translated early quantum research into a testable, real-world product.

- Brought together mechatronics, software and UX teams to deliver integrated R&D.
- Accelerated the transition from lab-based research to functional prototype.
- Enabled testing, iteration and demonstration through small-batch manufacturing of a commercially viable proof of concept.
- Contributed to the successful launch of Quokka, the first 30-qubit consumer quantum computer emulator.

Funding: UTS Grant, Lead CI: A. Prof Chris Ferrie

Case study: Combating the spread of misinformation through Data Science

Cloud-native analytics and AI tools to help defence and security agencies detect and interpret coordinated disinformation campaigns.

Need:

As misinformation becomes a weapon in information warfare, there is an urgent need to detect and analyse influence operations in near real time. Defence and security agencies require advanced tools to identify, classify and understand coordinated campaigns that target public perception, especially those spread through social media platforms.

Innovation:

We helped develop a suite of cloud-native tools that use machine learning, social media analytics, and interactive visualisations to support human analysts in identifying coordinated disinformation campaigns.

Key activities:

- Deploying social media crawlers to collect public data across platforms such as Twitter, Facebook and Instagram.
- Building real-time backend infrastructure with integration into KAFKA pipelines (Narrate V2).
- Utilising classification algorithms to detect misinformation and narrative clusters.
- Designing human-in-the-loop systems to improve accuracy and analyst oversight.
- Creating intuitive dashboards and UX to support engagement prediction and influence mapping.



Outcome:

- A scalable, cloud-based system to detect influence operations across social platforms.
- Visual tools that help analysts identify and interpret emerging narratives.
- Improved situational awareness for defence and security teams.
- Platform foundations enabling future research and system expansion (Narrate V2).

Funding: External Grant, Lead CI: A Prof. Marian-Andrei Rizoiu

Case study: Ranking and scoring legislation against global standards for women's rights

AI powered analytical tool to rank laws from gender regressive to gender responsive.

Need:

Create a digital tool that empowers users to access and compare legislation on women's rights, ranked and scored for gender responsiveness.

Enable the index to be used to uphold women's rights when drafting legislation, to drive action and reduce disadvantages for women globally.



Innovation:

A collaboration between law and data science developed AI powered heat-map visualisations to show a meaningful aggregation of different parts of each law's evaluation by each evaluator; and an algorithm to calculate the overall rankings.

Outcome:

The Gender Legislative Index (GLI) – an analytic tool used to benchmark, score and rank laws on a scale; from gender regressive to gender responsive.

The Gender Legislative Index was instrumental in establishing a new parliamentary body dedicated to scrutinising draft legislation to advance the needs and interests of Australian women.

“The women's rights law behind the GLI tells legislators how to do it better but the data science and machine learning brings the index integrity, while the UX and design thinking brings the GLI accessibility to a wide audience.

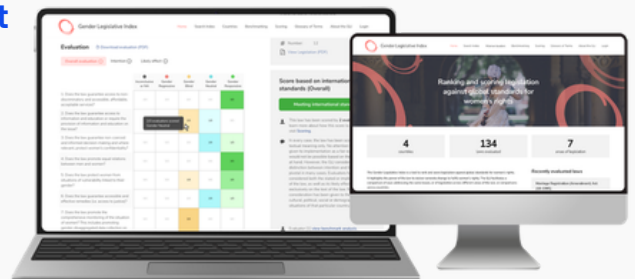
Rapido Social Impact's UX proficiency has elevated the Gender Legislative Index to an open access tool, enabling the team to influence activists, legislators and inter-governmental organisations globally.



Professor, Dr Ramona Vijeyarasa, Founder of GLI

We believe this collaboration with UTS Faculty of Law and Connected Intelligence Centre marks just the beginning of a transformative journey towards a more gender-inclusive legislative landscape in Australia.

Funding: UTS & External Grants, Lead CI: Prof. Ramona Vijeyarasa
Photo credit: Toby Burrows



Funding and delivery model

R&D in partnership

UTS Rapido operates as a professional R&D service within the university, with staff funded through project-based cost recovery from external partners. This means we collaborate on projects where funding is in place to support design, engineering and development activity.

Project funding may come from grants, the UTS Research Office, faculty investment or external industry partners.

We can assist with early-stage project scoping, provide input into your application, and help ensure the technical delivery component is aligned with your funding goals.

Our partnership approach allows for change and uncertainty. We use adaptative project management principles to collaborate with academic partners throughout each project.



Core Engineering & IT capabilities

UX and Digital Design

We create value generating digital solutions by identifying the needs of your business, its market, and the end-users, and by designing, developing and deploying innovative solutions in software and hardware.

Mechatronics and Additive Manufacturing

We design, test and build intelligent systems that solve technical challenges through mechanical and mechatronic engineering, supported by in-house additive manufacturing expertise.

Software Engineering

We apply analytical thinking, engineering principles, methods, tools and the latest AI software development expertise to the design, development and maintenance of bespoke software solutions.

Research Translation

We use our commercial experience, to provide engineering and technological capability to turn research into practical, scalable solutions and move beyond discovery into development, deployment and impact.

Collaborating for impact

The UTS Research Office supports the entire research management lifecycle, including ethics approvals, grant administration, contracts, pricing, data collection and effective use of research tools.

UTS Rapido works together with the Research Office who provide expert advice and information to optimise UTS funding proposals. Our collaborative goal is to help researchers turn strong ideas into scalable, real-world solutions.

Research translation is central to delivering tangible outcomes. Our services work in harmony to support your research strengths, translate your research, and apply engineering and technology expertise to collaboratively deliver impact.



Multidisciplinary innovation hub with professional R&D engagement and project management



Impact focused
R&D Engineering
and IT innovation hub



Rapido Social Impact



Bridging the gap between
academia and industry



Research translation



Software, mechatronics,
UX & digital experts



Grant application support

“It's crucial for us to partner with leading tech experts to enhance the adoption and efficiency of tools designed to significantly diminish modern slavery. This collaboration with UTS Rapido is helping us deliver impactful solutions.”

– *Nicholas Bernhardt, CEO, Informed 365*

“The Rapido team integrated seamlessly into our business and into the role of a trusted advisor. We recommend any company looking for similar support to seek out a discussion with UTS and explore the opportunities the UTS Rapido team has to offer.”

– *Bob Dixon, CEO, Water Gas Renew*

“UTS Rapido has greatly assisted us with the logic of the coding and delivery of the project, which was a challenge we needed to address.”

– *Peter Geoghegan, Managing Director, Geotron*

“UTS Rapido had the knowledge, passion, commitment, and will to try something previously untested in creating the GLI.”

– *Associate Professor Ramona Vijeyarasa
Chief Investigator, Gender Legislative Index*

“The work we're doing with UTS Rapido is a quantum shift in our industry and it will allow us to make smarter and more efficient investment decisions.”

– *Philip Byrum, Director, Orion Consulting*

“Working with Rapido was a seamless process. They were just so competent; they understood exactly what we needed to achieve.”

– *Jasmine Sayour, Managing Director, PolySpine*

CONTACT US

Ready to discuss a project, partnership or find out more about our R&D expertise, labs and facilities?
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