

2023–2025 Research Outcomes and Impact

Australian Institute for Machine Learning (AIML)



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Excellence in Research and Innovation

Our vision

To be global leaders in machine learning research, and high-impact research translation.

Our mission

Research excellence in machine learning (ML), artificial intelligence (AI), and computer vision (CV).

Australian Institute for Machine Learning (AIML)



First and largest
university-based machine
learning group in Australia



Continued AI education and
advocacy through Kingston AI
Group and RAIR Community
Engagement



Winner of the 2023 Open
Catalyst Challenge hosted by
Meta AI Research



Three major research centres
opened in 2024 targeting
critical AI growth areas



Winner of the 2025 Association
for Computing Machinery (ACM)
Special Interest Group on
Information Retrieval (SIGIR) Test
of Time Award



Creating 2-year AI master's
program with the School of
Mathematics launching in 2026

Welcome

From the Deputy Vice-Chancellor (Research) and the Pro Vice-Chancellor (Research Excellence)

The Office of the Deputy Vice Chancellor - Research and Innovation warmly congratulates the Australian Institute for Machine Learning (AIML) on its outstanding achievements and its significant contribution to Adelaide University's research reputation and impact.

Over the past three years, AIML has established itself as an internationally renowned concentration of research expertise in machine learning, computer vision and artificial intelligence, with a strong track record in capability building and external engagement.

AIML is distinguished by its ability to translate world-class research into real-world outcomes. This is reflected in major partnerships and initiatives such as the CommBank Centre for Foundational AI Research, the Industrial AI program and the Responsible AI Research Centre, each strengthening South Australia's and the nation's AI capability. The Institute has also driven impactful collaborations across sectors, including agriculture through AAGI, health through initiatives such as IMAGENDO and IBD-PERFECT, and the creative industries through partnerships with Rising Sun Pictures. Together, these examples highlight the breadth of AIML's influence and its strength in connecting research with application.

Looking ahead, AIML is exceptionally well placed to help lead Adelaide University's ambition to be at the forefront of Australia's AI future. Its depth of expertise, strong partnerships and proven capacity for translation position it to drive research that builds national capability, generates economic value and addresses emerging challenges. Through this continued commitment, AIML is not only advancing the field of AI but also contributing to the industries and workforce of the future.



Professor Anton Middelberg
Deputy Vice Chancellor –
Research and Innovation



Professor Laura Parry
Pro Vice Chancellor, Research
Performance

Director's overview

The recipe for AI innovation around the world has been the same; a globally ranked university, a critical mass of AI research talent, and an innovation district from which these ideas can take root and grow. AIML is uniquely blessed with all three.

As an Institute, we have some of the best and brightest minds in AI, machine learning, robotics, computer vision and other fields from around the country and the world, which we are incredibly fortunate to combine with amazing researchers in fields such as AI ethics and Responsible AI. Over the past three years, our research and outputs have continued to outperform other international research institutes of larger size and our local and international impact in the AI sphere continues to grow.

National impact

The Institute continues to develop and maintain industry, government, and academic partners at the state, federal, and international levels to not only ensure a diverse range of opportunities for our researchers, but to play a pivotal role in shaping Australia's AI environment.

In 2023, AIML continued our important AI education and advocacy work through the [Kingston AI Group](#), a group of Australia's leading professors of AI working together to ensure that Australia benefits from the AI revolution. AIML is also committed to our work building the AI pipeline from schools to industry across South Australia and the nation, an issue of great importance to me. In August that year, more than 150 people from across government, business, and industry came together to explore the latest in AI research at the AIML Research Showcase 2023. The showcase's focus was Responsible AI: what it means, how it works, and how AIML is supporting its growth in Adelaide.

We are incredibly proud of the AIML members who presented 20 papers accepted at the 2023 Institute of Electrical and Electronics Engineers (IEEE) CVPR conference in Vancouver. CVPR is ranked by Google Scholar at number 4 among all journals (by h5-index). Another 2023 highlight saw AIML researchers Dr Xinyu Li, Dr Zhen Zhang, Professor Anton van den Hengel, and Professor Javen Shi win the Open Catalyst Challenge hosted by Meta AI Research (formerly known as Facebook AI Research) on the NeurIPS Competition Track with a success rate of 46%.

2024 saw an over \$40M investment in building critical domestic AI capability in Australia through the creation of several research centres: AIML's Industrial AI program; the Commbank Centre for Foundational AI; and the Responsible AI Research (RAIR) Centre. These multi-year investments showcase important research with national and global influence supported by the South Australian government and other stakeholders.

In 2024, AIML was mentioned in 252 media articles potentially reaching almost 5 million viewers across Australia. That year, our researchers produced 302 academic publications and we provided several research funding opportunities including PhD scholarships, master's by research and coursework scholarships, summer research scholarships, and several internships.

Through the Kingston AI Group, a [seminal report](#) on AI's incredible impact on the Australian economy was released. And on a smaller but no less impactful note, I'm pleased that in 2024, we began developing short,

“

I'm in Adelaide because Adelaide is the home of the Australian Institute for Machine Learning which has really become the highest profile machine learning institute in Australia.”

Professor Christopher Manning,
Associate Director of the
Stanford Institute for
Human-Centered Artificial
Intelligence



Australia's AI Imperative

The economic impact of artificial intelligence and what's needed to further its growth

By John Mangan

[Roadmap Generator](#), a tool to help companies “cut costs, trim operational spend, boost customer satisfaction, and accelerate product expansion” using AI.

Global presence

AIML has established strong relationships with government at both the state and federal level and embraces its role in advocating for Australia's research in AI and ML to international governments and industry bodies.

In 2023, AIML hosted delegations from NASA, the UK Space Industry and Government, Japan (JAXA) space agency, India Aerospace and Defence, and ambassadors of NATO countries leading to a wealth of research and industry opportunities for students and researchers. We hosted a tour for Dame Angela McLean, Chief Scientific Adviser to the UK Ministry of Defence, as part of an interactive showcase of University of Adelaide student projects exploring real-life applications of architecture, engineering, science, technology, computer and mathematical sciences. The Institute also hosted visits from His Excellency Mr Ryuta Ibaragi, Governor of Okayama, Japan and the Vietnamese Ambassador to Australia, Mr Nguyễn Tất Thành. AIML is actively pursuing opportunities to increase its links with academia and industry in Vietnam and Southeast Asia more broadly.

In 2024, the Institute proudly sponsored a group of exceptionally talented high school students to represent Australia at the International AI Olympiad (IOAI) in Bulgaria. The team was comprised of 4 students - 2 boys and 2 girls - selected from the best students across the country through several competitions as well as accomplishments in computer science, mathematics, natural sciences, linguistics, and chess. We also sponsored the [Australasian Joint Conference on Artificial Intelligence](#) (AJCAI), the premier event for artificial intelligence researchers in Australasia and a major international forum on AI worldwide.

high-impact videos explaining our researchers' work, and reignited the creation and distribution of the AIML newsletter which was relaunched in September thanks to increased staffing capacity.

2025 was yet another massive year for our Institute. We developed a specialised, [two-year AI master's program](#) with the University's School of Computer and Mathematical Sciences that will launch in 2026; commenced our inaugural Summer Grand Discovery Challenge, a machine learning competition for undergraduate and postgraduate students at Adelaide University designed to solve real-world problems using applied AI; and also launched [AIML Shop](#), an incredible initiative that leverages the Institute's world-class academic research and engineering capabilities into widely adoptable open-source and commercial products.

2025 also saw the evolution of our partnership with deep-tech venture capital firm Main Sequence to co-lead the Centre for Augmented Reasoning's (CAR) Catalyst Program, an initiative to provide essential tools, resources, and mentoring to 10 teams over 13 weeks to accelerate their journey from product development to market entry.

In 2025 we also released the exciting [AI](#)

2025 was a big year for expanding the Institute's international relationships and stakeholders. In June, several AIML members and I attended the IEEE/CVF Conference on Computer Vision and Pattern Recognition Conference (CVPR2025) in Nashville, Tennessee USA where we also held our second 'Aussies in AI' event to amplify awareness of Australia's growing leadership in fundamental AI research.

A 2025 highlight was hosting Professor Christopher Manning, Director of the Stanford University Artificial Intelligence Laboratory (SAIL) and a towering figure in the AI field, to deliver a talk on 'Meaning and Intelligence in Language Models: From Philosophy to Appropriate LLM responses.' We were proud sponsors of Team Koalafied who attended the FIRST® Robotics Competition World Championship held from 16–19 April in Houston, Texas. Comprised of 14 high school students from Pembroke School in South Australia, Team Koalafied was one of only five Australian teams to compete, where they designed, built, tested, and programmed their competition robots entirely from scratch.

The end of the year saw AIML organise two incredible and important conferences: the 26th International Conference on Digital Image Computing: Techniques and Applications ([DICTA 2025](#)); and the [Next Generation Responsible AI Symposium](#), hosted by AIML's Responsible AI Research (RAIR) Centre, the South Australian government, and CSIRO. Both conferences provided a fantastic opportunity for policymakers, industry professionals, researchers, and members of the public to explore and even help shape Australia's AI ecosystem.

2026 and beyond

Australia has a huge opportunity over the next few years to determine what type of country we want to be in the 21st century around AI. There is great interest in making AI safer and much more responsible, which requires a strategic investment not only in our universities, but also in our small-to-medium enterprises.

Through our fantastic partnerships with organisations such as CommBank, CSIRO, NVIDIA, Main Sequence, Lockheed Martin Australia, and other groups, I know that AIML's impact on the AI space, both locally and nationally, will continue to produce exceptional outcomes and draw the best and brightest in the AI sphere to our doors.

I greatly appreciate the continued and enthusiastic support of the Government of South Australia and the valuable support and collaboration of our federal stakeholders. I thank our advisory board members, academic leaders, early and mid-career researchers committee, and all our hard-working members for their valuable contribution to ML science and innovation. Lastly, I thank the University of Adelaide, very soon to be Adelaide University, for its continued and unwavering support of AIML's mission and objectives.



(L-R) Professor Anton van den Hengel; the Hon Steven Marshall, President of the Australia America Association and former Premier of South Australia; AIML Senior Researcher Dr Hemanth Saratchandran; and Professor Lucey in New York to explore opportunities for deepening international scientific collaboration.



Professor Simon Lucey, AIML Director

Diversity, equity, gender and inclusion

There are longstanding societal challenges arising from gender inequality, a lack of diversity, and the exclusion of marginalised individuals. These challenges include the gender pay gap, underrepresentation of marginalised groups, perpetuation of stereotypes and bias, harassment and discrimination, and unequal access to opportunity.

Gender Equity, Diversity, and Inclusivity (GEDI) charter

In 2023, the Institute created a Gender Equity, Diversity, and Inclusivity (GEDI) charter working to end all forms of systemic discrimination across gender, ethnicity, age, disability, sexual orientation, neurodiversity, and other factors. The charter is part of a larger AIML initiative to foster an inclusive working environment where everyone feels respected, heard, valued, and supported.

AIML is and remains deeply committed to advancing our GEDI charter. We proudly saw our female and non-binary membership grow from 21% to 27%. According to the 2024 Stanford AI Index, this places AIML well ahead of global benchmarks, where women hold roughly 22% of AI roles and only 18% of AI research positions. We view this progress as a reflection of our ongoing dedication to fostering a diverse and inclusive community in AI.

AIML is also proud to be a truly global institution, with approximately 45% of our members coming from non-Australian backgrounds across Asia, the Pacific, Europe, and North and South America in 2025.

Award, events, and sponsorship

AIML regularly works with community groups to promote diversity in science, mathematics, and technology.



AIML postdoctoral researcher Dr Xinyu Zhang won in the Education/Research category at the Women Leading Tech Awards event in Sydney, Australia on 28 March 2025.

From 2023-2025, AIML continued its sponsorship of Women in AI (WAI) as an annual sponsor of the WAI Awards Asia Pacific (APAC) gala and ceremony, recognising incredible women working in the AI space. AIML also hosted several Ada Lovelace lunches, which provide an opportunity for women and gender diverse members at AIML to share their experiences, achievements, and concerns in a confidential and friendly forum.

Our female members are leaders in their fields, as acknowledged by the many accolades they've received. In 2024, we proudly watched as AIML Senior Lecturer Dr Wei Zhang was announced as a finalist in the WAI APAC awards in 2024. In 2025, Wei was announced the winner and AIML Machine Learning Engineer Nandhini Subramanian was recognised as a finalist in the Data Science/AI Pioneer Award category of the 2025 Women of Colour in STEM Awards. AIML postdoctoral researcher, Dr Xinyu Zhang, won in the Education/Research category in the Women Leading Tech Awards in 2025.

In June, AIML Institute Manager Dr Kathy Nicholson was an invited panellist at The AI Summit London 2025 which brought together innovative technologists and business leaders to explore AI's real-world, transformative applications. In a panel discussion with fellow panellists Xiomei Wang from PathoAI and Davar Ardalan from Taylor & Francis Group, we highlighted the vital role that women have played in driving technological innovation. "My hope is that [one day] we won't need panels of this kind because workforce equity programs and initiatives will have made them unnecessary," she noted during the discussion.

That month, we screened the film [Bombshell: The Hedy Lamarr Story](#) about the acclaimed Hollywood actress whose ingenious inventions helped revolutionise modern communication. In July, AIML screened award-winning documentary, [Coded Bias](#), which follows MIT Media Lab researcher, Dr Joy Buolamwini, as she discovers and discusses racial biases and flaws in facial recognition technology. The screening was held at the Lot Fourteen Lecturer Theatre and took place before more than 85 attendees from across the University and Adelaide.

AIML is active in supporting the next generation of STEM professionals. In 2025, AIML hosted approximately 16 students as part of [CSIRO's Young Future Shapers program](#). During their visit, the students engaged with CSIRO and AIML staff, including members of the RAIR Centre. Young Future Shapers supports students in Years 5 to 10 who may have limited access to learning opportunities and resources. The program aims to build students' confidence, capability, and connection with STEM and prioritises Aboriginal and Torres Strait Islander students, girls, students from lower opportunity backgrounds, and those from regional areas.

One of our most popular events, Community Day, is an incredible opportunity for team members to connect outside of the workplace while providing our international members with an enriching experience of Aussie culture. In 2024, Community Day was held at Belair National Park, and in both 2023 and 2025 it took place at a picturesque farm. Each year the event attracts over 100 attendees, fostering camaraderie and community spirit.

And at the end of 2025, AIML launched a fun and valuable new initiative; a monthly Book Club designed especially for our members for whom English is their second language. The Book Club is a great way for our members to practice English while reading short stories filled with humour, history, and characters that shaped the Australian spirit. We're looking forward to bringing each of these wonderful initiatives with us into the future and developing new ones along the way.



Dr Kathy Nicholson, AIML Institute Manager

"My hope is that [one day] we won't need panels of this kind because workforce equity programs and initiatives will have made them unnecessary."

Dr Nicholson at The AI Summit London, 2025

Research Fellows



Dr Ravi Garg

Future Making Fellow 2023 - 2026

Dr Ravi Garg is a researcher working in the domain of Computer Vision and ML. He obtained his PhD in 3D Vision from The University of London in 2014 with a dissertation on dense monocular capture of deformable surfaces.

His current research interest includes static and dynamic 3D Reconstruction, Visual Reasoning and Generative AI for Robotics and Automation.



Dr Ehsan Abbasnejad

Future Making Fellow 2022 - 2025

Dr Ehsan Abbasnejad is a senior lecturer at the University and a CAR team leader. He obtained his PhD from the Australian National University in 2015.

His research interests include responsible ML and out-of-distribution generalisation with applications to various vision and language tasks.



Dr Dhani Dharmapran

Future Making Fellow 2023 – 2027

Dr Dhani Dharmapran is a biomedical engineer whose research employs ML

techniques to address cardiology challenges. She obtained her PhD from Flinders University in 2020.

Additionally, she is exploring using ML to improve the prediction of patient trajectories and enhance clinical decision-making processes in collaboration with cardiologists at Flinders Medical Centre.



Dr Wei Zhang

Early Career Industry Fellow 2024 - 2029

Dr Wei Zhang is an AIML researcher and an Honorary Lecturer at the School of Computing, Macquarie University. She received her PhD from the University of Adelaide in Computer Science in 2017.

Her research focuses mainly on big data analytics, text mining, ML, and Internet of Things (IoT), including IoT-enabled automated mushroom cultivation that provides access to new agricultural techniques.



Dr Melissa McCradden

Hospital Research Foundation Fellowship awarded 2023, to commence 2024-2029

Dr Melissa McCradden is a researcher with The Hospital for Sick Children (SickKids) in Toronto, Canada. She was appointed a five-year Hospital Research Foundation Fellowship in Paediatric AI Ethics through the University of Adelaide, alongside a joint appointment as AI Director at the Women's & Children's Hospital Network (WCHN).

She received her PhD in Neuroscience from McMaster University in 2017. Her past work has focused on how to integrate research ethics and evidence-based medicine.



Associate Professor Johan Verjans

Future Industry Making Fellowship 2022–2026

Associate Professor Johan Verjans is a clinician-scientist and cardiologist at the Royal Adelaide Hospital, and Platform Leader for AI at the South Australian Health and Medical Research Institute (SAHMRI). Trained at Maastricht University, he did fellowships at Massachusetts General Hospital/Harvard Medical School and University Medical Centre Utrecht before joining the University in 2017.



Dr Weitong Chen

ARC Early Career Industry Fellowship 2024-2027

Dr. Tony Weitong Chen is an ARC EC Industry Fellow, a senior lecturer at the University of Adelaide and a researcher at AIML. His research primarily focuses on machine learning, with a special interest in its application to medical data and offers substantial benefits to SA Pathology and similar organisations, enhancing efficiency and resource management.

IMPACT – Research excellence drives new investments and opportunities in AI

Building the talent pipeline

AIML has developed several centres and initiatives to further expand AI and machine learning research and capabilities in Australia.

Centre for Augmented Reasoning (CAR)



CAR was established in 2020 and was a four-year \$20 million investment by the Australian Department of Education. The program is led by AIML Chief Scientist Professor Anton van den Hengel and provides scholarships and funding opportunities as well as programs for professional growth for students and researchers.

Since its inception, the CAR program has provided financial and logistical support to 36 post-doctoral researchers and 12 PhD students. The program has also hosted over 40 events, had its members contribute to over 2000 publications, and had 22 successful grant applications leading to over \$35 million in funding.

The [Kingston AI Group](#), an initiative of the directors of AIML and CAR, includes 14 top professors of ML from eight Australian universities. The Kingston AI Group has continued to advocate for Australian AI sovereignty and other objectives via policy submissions since its inception in 2022 and publishes pieces and government submissions touting the need for increased investment in Australian AI.

In November 2023, the group published an article that asked the critical question, ‘If Australia invested [\\$1 billion in AI research and development](#), where should the money be spent and what impact would we see?’ In the piece, group members identified funding a national AI initiative, creating ecosystems between universities, startups, and industry that allow for AI innovation, strong and robust government investment, and partnering those investments with core research technology as critical to growing AI in Australia.

The concept of the AIML Shop was initiated through the CAR program in 2023 and progressed to realisation in 2025. The Shop features approximately 9 projects and is designed to enhance the global impact of AIML's world-class research by making advanced tools, such as machine learning models and software solutions, more accessible and reliable for industry adoption.

Leading up to 2024, CAR researchers successfully received over \$13,511,000 in funding and grants. In 2024, the Centre conducted several workshops, guest lectures, and seminars with groups such as CSIRO/Data61 and Google Research Australia.

On 16 April 2024, the Kingston AI Group-commissioned economic report entitled “[Australia's AI Imperative](#): The economic impact of artificial intelligence and what's needed to further its growth” was published. The report was a 9-month engagement with Professor John Mangan, an Emeritus Professor of Economics at The University of Queensland, to produce a comprehensive report on the current state of AI in Australia and the steps the country must take to ensure that it is a full partner in the AI economy.

In April 2025, CAR welcomed Dr Johan Barthelemy, NVIDIA's Senior Developer Relations Manager, and Wei Fang, Senior Solutions Architect with NVIDIA to Adelaide for discussions with participants in the CAR Catalyst Program, a dynamic initiative funded by CAR, co-led by Main Sequence Ventures, and supported by NVIDIA. The 13-week program was designed to bridge the knowledge gap between academic research and commercial

acumen. The NVIDIA team's visit focused on how NVIDIA's technology can help researchers accelerate innovation.

In May 2025, CAR hosted a Legacy Event that showcased the Centre's achievements and impact. The event also featured the winner of the CAR Catalyst program. Five teams competed for the CAR funded AIML Catalyst Spark prize, including AIML PhD students, post-doctoral researchers, and members of the Adelaide community with Sam Hodge, AIML Senior Machine Learning Engineer, announced as the winner.

Industrial AI program



Launched in 2024, AIML's Industrial AI program is a \$12 million investment by the South Australian Government and the University of Adelaide. Its goal is to grow core AI capabilities that drive economic growth and job creation across South Australia and the nation. The program aims to increase AI adoption for enhanced productivity, attract world-class talent, leverage AIML's expertise to solve national challenges, and ensure AI technologies remain responsible and inclusive.

Key initiatives of the program include research appointments, scholarships for higher degree research students, and targeted support for South Australian SMEs to adopt AI through the AI Road Map and ML Innovate grants. Rather than cash

awards, these grants provide SMEs with tailored access to AIML's team of machine learning engineers, enabling the development of bespoke AI solutions to enhance innovation, operational efficiency, and competitive advantage.

A noteworthy outcome of the program was the launch of AIML's [AI Roadmap Generator](#) in 2025. The AI RoadMap Generator helps small and medium enterprises (SMEs) take their first step in considering how AI adoption could help their businesses.

The Industrial AI SME Grant Program is an initiative of the Industrial AI program and aims to support South Australian SMEs to adopt AI by providing them with access to machine learning engineering expertise from our Industry Solutions Team.

The program offers a unique opportunity for South Australian businesses to enhance their business operations, develop innovative solutions, and leverage AI technology to gain a competitive edge. These transformative technologies can provide businesses with significant ongoing benefit and growth potential.

Instead of cash, the grants offer invaluable access to AIML's machine learning engineers, providing tailored support to elevate organisations' AI and machine learning capabilities.

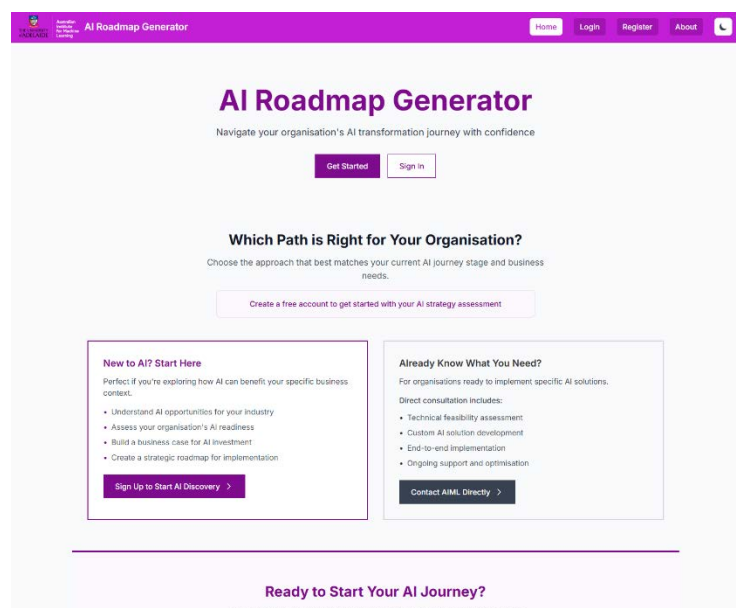


Image of the front page of the AI Roadmap Generator, created under the Industrial AI program.

Responsible AI Research (RAIR) Centre



Launched in December 2024, the Responsible AI Research (RAIR) Centre is a \$20 million collaboration between AIML, CSIRO's Data61, and the Government of South Australia. RAIR's research themes focus on:

- Tackling misinformation
- Safe AI in the Real (physical) World
- Diverse AI
- AI that can explain its actions.

The RAIR centre has been designed to place Australia at the global forefront of research into safe and responsible artificial intelligence. RAIR will focus on developing fundamental responsible AI research at the right scale to have impact at both a national and

international level by combining the Software Engineering for AI (SE4AI) strength of CSIRO's Data61 with AIML's strength in machine learning research and translation.

The RAIR Education and Community Outreach Program seeks to educate the larger community on the countless opportunities that AI can bring to society and the importance of ensuring that what is created is both ethical and responsible. The Program aligns its activities – a blend of workshops, presentations, and interactive sessions - within the four RAIR research themes.

Demonstrating RAIR's position as a global leader, there will be a focus on commercialising a range of Responsible AI solutions in partnership with the Australian industry.

CommBank Centre for Foundational AI

The CommBank Centre for Foundational AI Research was launched in September 2024. The Centre was born of a \$6 million investment by CommBank, the largest investment in AI of any company in Australia. The Centre will position South Australia as a leader in foundational AI research, developing cutting-edge machine learning techniques with real-world applications across industries such as finance and national security. CommBank will harness these innovations to enhance customer security and create more personalised banking experiences.

CommBank's inaugural sponsorship of the International Conference on Learning Representations





The CommBank Centre for Foundational AI Research booth at ICLR 2025, with (left to right): Padma Arni, Arun K Lenin, and Anna Leontjeva of CommBank with AIML's Jessica Cortazzo and Dr Hemanth Saratchandran.

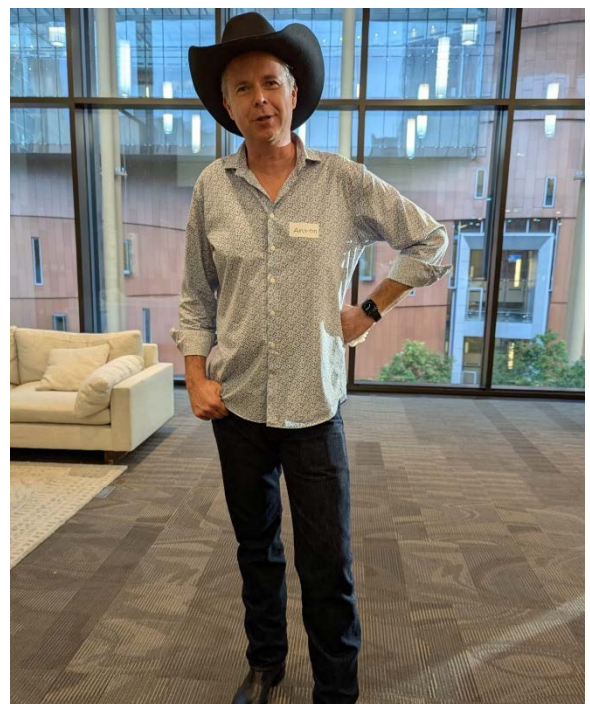
Hemanth Saratchandran attended the IEEE/CVF Conference on Computer Vision and Pattern Recognition Conference (CVPR2025) in Nashville, Tennessee where they held an independent post-conference event, Aussies in AI, to amplify awareness of Australia's growing leadership in fundamental AI research. Held at the Country Music Hall of Fame and Museum, the event attracted over 80 attendees from 14 countries, generating significant interest in South Australia's contribution to global AI research.

The event brought together a diverse mix of leading researchers and industry professionals, with attendees representing institutions such as Carnegie Mellon University, the Technical University of Munich, the National University of Singapore, MIT, and the University of British Columbia, alongside global technology leaders including NVIDIA, Meta, and Apple.

(ICLR) 2025 in Singapore saw the CommBank Centre for Foundational AI Research, and CommBank more broadly, on exhibition alongside the likes of Google, Meta, Apple, Microsoft, Amazon, OpenAI and Huawei.

In May 2025, the Centre hosted Professor Christopher Manning, inaugural Thomas M. Siebel Professor in Machine Learning in the Departments of Computer Science and Linguistics at Stanford University, Director of the Stanford Artificial Intelligence Laboratory (SAIL), an Associate Director of the Stanford Institute for Human-Centered AI (HAI), at AIML to deliver a talk on 'Meaning and Intelligence in Language Models: From Philosophy to Appropriate LLM responses.'

In June, AIML Director Professor Simon Lucey, Chief Scientist Professor Anton van den Hengel, and senior researcher Dr



AIML Chief Scientist Professor Anton van den Hengel at the 'Aussies in AI' event in Nashville, USA 15 June 2025.

Case Studies and Industry Engagement

In 2025, AIML Senior Lecturer, Dr Tim Chen worked with his colleagues at Saab Australia to develop a strategic planning tool for maritime defence to respond to advanced threats. The real-time decision support tool is intended to improve decision superiority, especially under “fog of war” pressure and provides a powerful training and mission rehearsal tool.

“The aim is ultimately contributing to a more agile, effective, and resilient maritime force,” said Dr Chen. His team produced a case study on the tool’s development, ‘[Strategic Maritime Planning Tool for Enhanced Defensive Hypersonics](#),’ located on the Defense Trailblazer web site.

In 2025, the Institute developed a video case study as part of the [Industrial AI program](#).



In 2025, AIML created a video case study as part of its Industrial AI program.

In the video, Jonathon Read, AIML Engineering Manager, and former AIML engineer Deval Shah; Andrew Hannel, founder of Digital Constructors; Cropify's Senior Machine Learning Engineer, Dr Antonios Perperidis, and Co-CEO and Founder, Anna Falkiner offer advice to SMEs on how to best adopt AI into their operations.

To view AIML's video case study, please visit:

<https://www.youtube.com/watch?v=UKMYkYpaRo>

Please click the links below for AIML case studies related to our work supporting industry.

[Faster, fairer, smarter: Cropify's AI grain grading innovation](#)



Established in 2019, Cropify aims to eliminate subjective testing in pulse and grain crops by leveraging AI and machine learning technologies.

Leveraging an AIML grant from the Government of South Australia, Cropify worked with former AIML engineers Sam Bahrami and Aaron Lane to develop an AI-driven software prototype capable of analysing grain and pulse quality with high precision.

By utilising high-resolution imaging and advanced algorithms developed by AIML team members, Cropify's technology can now assess an industry-standard sample of lentils in approximately 90-seconds—a substantial improvement over the traditional 24-minute manual process.

Photo: Cropify co-founder and CEO Anna Falkiner and co-founder and COO Andrew Hannon. Photo credit: Cropify.

[Construction maintenance using AI-driven insights](#)



Digital Constructors seeks to leverage digital tools to enhance infrastructure assessment, reduce risk, and improve on-site decision-making.

Working with AIML engineers, the team committed to building a minimum viable product (MVP) named ConstructAI, a camera-based machine learning platform that uses computer vision to automate critical infrastructure monitoring procedures when mounted on the front of a locomotive. The team trained the model to accurately detect and classify various issues.

“Based on testing during development of the MVP, the key benefits included rapid data collection that was many magnitudes faster than alternative methods,” said Andrew Hannell, Founder of Digital Constructors. “The tool also produced high-quality data that was non-subjective.”

Photo: Andrew Hannell (front), together with AIML engineers Aaron Peter Poruthoor (left) and Sam Hodge (right). Photo credit: Digital Constructors.

Local and International Engagement

AIML has established strong relationships with industry, academia, and government at the state and federal levels. Our engagement at all levels highlights our commitment to advocating Australia's research capabilities in AI and ML to community groups, schools, and local industry as well as Australian and international governments and industry bodies.

2023

In 2023, AIML hosted delegations from NASA, the UK Space Industry and Government, Japan (JAXA) space agency, India Aerospace and Defence, and ambassadors of NATO countries leading to a wealth of research and industry opportunities for students and researchers.

Master research agreements (MRAs) were signed with MITRE, a U.S.-based, non-for-profit research and development organisation, in late 2022. AIML recruited a domestic PhD student for the first scholarship, Adam Bethell, who commenced his studies in early 2023. Supervised by Professor Ian Reid, Adam's research is on simultaneous visual tracking and object modelling using an autonomous drone for surveillance and pursuit, which has significant alignment with MITRE's research objectives and pertinence to national security.

AIML members participated in many community engagement events in 2023 including presenting at the Lot Fourteen Student Showcase, speaking to over 100 undergraduate students at the first PhD @ AIML Information Session, and hosting cohorts from local schools including Sunrise Christian School, the Australian Science & Mathematics School (ASMS), and The University of Adelaide's Wirritu Yarlur Aboriginal Education unit.

In November, AIML partnered with the Australian Academy of Technological Sciences and Engineering (ATSE) in a new report titled *Responsible AI: Your questions answered*, a short collection of papers exploring responsible AI and the benefits it offers Australia. Authors featured in the 38-page report include Centre for Augmented Reasoning (CAR) Director Professor Anton van den Hengel; CSIRO Data61 Director Professor Jon Whittle; AIML Director Professor Simon Lucey; National Artificial Intelligence Centre Director Stela Solar; and Australian Academy of Technological Sciences and Engineering (ATSE) Chief Executive Officer Kylie Walker.



Cover of 'Responsible AI: Your questions answered' authored by AIML and ATSE.

By the end of 2023, AIML had worked with or was working with numerous organisations to adopt or develop ML technology. During this period, AIML engineers and researchers transitioned to roles at Amazon, Rising Sun Pictures, Amplified Intelligence, Canva, Mighty Kingdom, and other established companies.

Other AIML students were also afforded opportunities to visit some of the most prestigious universities and companies in the world, expanding their networks as well as their AI knowledge.

AIML researchers Dr Xinyu Li, Dr Zhen Zhang, Professor van den Hengel, and Professor Shi won the Open Catalyst Challenge hosted by Meta AI Research (formerly known as Facebook AI Research) on the NeurIPS Competition Track. The Open Catalyst Challenge uses machine learning to accelerate the calculation of adsorption energy and the discovery of new catalysts. The Causal AI Group from AIML won the challenge with a success rate of 46%.

And AIML researchers Dr Yanyuan Qiao, Zerui Li, Jingxing Cao, Gengze Zhou, and Associate Professor Qi Wu won 3rd prize at the Large Robotics Model and Embodied AI Challenge at the CCF Chinasoft Conference in Shanghai in December. Well done to both teams!

2024

In December, Senator the Honourable Penny Wong, Australian Minister for Foreign Affairs, and His Excellency Maris Sangiampongsa, Minister of Foreign Affairs of the Kingdom of Thailand, visited AIML as part of their Australia-Thailand Foreign Ministers' Meeting, held at Government House in Adelaide. During the visit, Professor Peter Høj AC, Vice-Chancellor and President of the University of Adelaide, welcomed attendees and touched on the ethical and practical aspects of AI, including responsible AI development. Afterwards, AIML Director Professor Simon Lucey spoke on the need for advancements in AI to be more energy and data efficient, the importance of collaborative research between like-minded countries, and how critical it is for AI to be accessible to all parts of society in order to create a richer economy.

In October, AIML Director Professor Lucey joined other AI experts and former Prime Minister The Hon. Julia Gillard AC for the annual Julia Gillard Public Lecture, held at the University of Adelaide. The lecture focused on the current and future impact of AI on Australia and the world. Professor Lucey was joined on stage by Professor Carolyn Semmler, leader of the Applied Cognition and Experimental Psychology research group and Dr Samuel White, a Senior Lecturer in the University of Adelaide Law School and a Cybersecurity Postdoctoral Research Fellow. The three panellists spoke of what excites them most about AI, what concerns them, and most importantly what role governments, industry, and the public play in future AI advancements.



His Excellency Maris Sangiampongsa, Minister of Foreign Affairs of the Kingdom of Thailand (in yellow tie) and Senator the Hon Penny Wong (in red shirt) visited the AIML building, December 2024.

That year, AIML announced a new strategic partnership between the University of Adelaide and the Commonwealth Bank of Australia (CBA) to drive cutting-edge machine learning research in financial services. This five-year collaboration established the co-branded CommBank Centre for Foundational Machine Learning Research at AIML, positioning South Australia as a leader in foundational AI research. The partnership has been so successful that a November 2024 article in [InnovationAus](#) noted that Commonwealth Bank's \$6 million investment in AIML had already paid for itself just three weeks into the five-year partnership.

In 2024, AIML continued its tradition of local and community engagement by sponsoring a group of exceptionally talented high school students to represent Australia at the International AI Olympiad (IOAI) in Bulgaria. The team was comprised of 4 students - 2 boys and 2 girls - selected from the best students across the country through several competitions as well as accomplishments in computer science, mathematics, natural sciences, linguistics, and chess.



Three of the South Australian IOAI 2024 team members receiving their awards at Lot Fourteen on 21 November 2024, along with Hilary Brookes, AIML's Executive Officer (Culture, Events, and Engagement), and Louis Fang, co-founder of Leading Coding

As part of our efforts to establish ongoing international engagement, in October 2024, AIML Deputy Director, Dr Melissa McCradden, launched an informative webinar series entitled “[AI on the Ground](#).” AI on the Ground is an interdisciplinary seminar series focusing on the real-world issues of implementing AI- and ML-based tools in medical settings. Speakers from across the globe discuss challenges, successes, and lessons learned across diverse fields from data science to human factors to regulatory science and more.

2025

2025 has seen AIML continue its strong engagement with local and international stakeholders. In May, AIML Director Professor Simon Lucey and Chief Scientist Professor Anton van den Hengel travelled to Manila, Philippines as part of a delegation led by the Governor of South Australia to visit the Asian Development Bank (ADB). Their visit highlighted the importance of reinforcing the values and principles of responsible AI and promoting AI for social good across Asia.

In March, AIML was pleased to welcome Her Excellency Arjaree Sriratanaban, Ambassador of the Kingdom of Thailand to Australia, to the Institute. During her visit, the Ambassador spoke with AIML members, including Professor Simon Lucey, to explore potential collaborations between AIML and universities and industries in Thailand.

In July, AIML welcomed a delegation of 18 students and schoolteachers from Northwest A&F University (NWAUFU) in Shaanxi, China, visiting as part of a teacher training program. The visit included presentations from AIML Business Development Manager Matthew Cliff, PhD student Cameron Gordon, and postdoctoral research fellow Dr Jinan Zou, covering AIML's research themes, centres, and ongoing projects. The following week, members of the World Hindu Economic Forum (WHEF) dropped by AIML and Lot Fourteen during the forum which was held 2-3 August at the Adelaide Convention Centre. WHEF serves as a platform to unite leaders, entrepreneurs, and innovators to foster economic growth.



AIML Business Development Manager Matthew Cliff addresses schoolteachers from Northwest A&F University (NWAUFU) in China at the AIML building 25 July 2025.

AIML was a proud sponsor of Team Koalafied who attended the FIRST® Robotics Competition World Championship held from 16–19 April in Houston, Texas. AIML is proud to have supported the team as a Silver sponsor. Comprised of around 14 high school students from Pembroke School in South Australia, Team Koalafied was one of only five Australian teams to compete, where they designed, built, tested, and programmed their competition robots entirely from scratch.

Continuing our support of local high schoolers, in August, 175 high school students from across metropolitan and regional South Australia visited

Lot Fourteen for a tour organised by the South Australian Government's Department for Education, designed to encourage interest in STEM pathways. As part of the tour, students visited AIML and attended presentations by AIML higher degree by research (HDR) students Yiping Ji, King Hang Wong, Cameron Gordon, Irhas Gill, and Zerui Li, alongside AIML ambassadors Karen Veigas and Clark Zhang. These presentations included personal stories about their journeys in science, as well as live demonstrations of AIML's state-of-the-art robotics capabilities.

A highlight of 2025 was AIML and Commonwealth Bank's hosting of Professor Christopher Manning, Associate Director of the Stanford Institute for Human-Centered Artificial Intelligence (HAI), for an insightful seminar on 5 May 2025 exploring the origin of language models. On 8 May, Professor Manning also spoke with ABC Radio Adelaide about his visit to Australia and what brought him to Adelaide. "I'm in Adelaide because Adelaide is the home of the Australian Institute for Machine Learning which has really become the highest profile machine learning institute in Australia," Professor Christopher Manning said during his ABC Radio interview.

In August, AIML welcomed US Congressman Joe Courtney, who has represented Connecticut's 2nd district since 2007. Congressman Courtney toured the AIML building and met with Director Lucey to learn about AIML's pioneering research in AI, machine learning, and computer vision. Congressman Courtney is a strong supporter of US-Australian relations and is an advocate of the Australia-United Kingdom-United States (AUKUS) trilateral partnership.

In September, AIML was honoured to welcome Tokuro Furuya, Consul-General of Japan in Melbourne, and Adam Wynn, Consul-General of Japan in Adelaide, for a tour of the AIML building. The visit was part of a broader Tonsley Innovation District and Lot Fourteen tour to introduce South Australia's thriving innovation ecosystem to international stakeholders.

AIML Principal Engineer Stefan Podgorski, PhD student Chun-Jung (Chad) Lin, and Master's student Zerui Li presented their exceptional research projects at the IEEE International Conference on Robotics and Automation (ICRA), from 20–23 May 2025 in Atlanta, Georgia USA. In 2025, AIML also welcomed Dr Jason



AIML Director, Professor Simon Lucey (left) with US Congressman Joe Courtney in front of the AIML building, August 2025

“

AIML—the culture and people—cares about doing good. The exchange of genuine curiosity and intellectual capital is unparalleled.

”

Dr Jason Pittman,
Fulbright Scholar and AIML
Visiting Researcher from the
University of Maryland Global
Campus

Pittman, Fulbright Scholar and AIML Visiting Researcher from the University of Maryland Global Campus, whose work reveals how certain patterns in written language can signal disinformation.

In October, AIML Chief Scientist, Professor van den Hengel, was invited to participate as a panellist in the 2025 Julia Gillard Public Lecture. Professor van den Hengel was joined on stage by Professor Joanne Wallis of the School of Social Sciences, and Professor Tim Legrand in the Department of Politics and International Relations to discuss how the rapidly changing geopolitical environment and rise of disinformation is impacting Australia, our foreign policy, development assistance, and our universities.

Also in October, AIML hosted approximately 16 students as part of CSIRO's Young Future Shapers program. During their visit, the students engaged with CSIRO and AIML staff, including members of the RAIR Centre. Young Future Shapers supports students in Years 5 to 10 who may have limited access to learning opportunities and resources. The program aims to build students' confidence, capability, and connection with STEM and prioritises Aboriginal and Torres Strait Islander students, girls, students from lower opportunity backgrounds, and those from regional areas.

Selection of Prizes, Appointments, and Awards

2023

AIML researchers Dr Xinyu Li, Dr Zhen Zhang, Professor van den Hengel, and Professor Shi won the Open Catalyst Challenge hosted by Meta AI Research (formerly known as Facebook AI Research) on the NeurIPS Competition Track. The Open Catalyst Challenge uses machine learning to accelerate the calculation of adsorption energy and the discovery of new catalysts. The Causal AI Group from AIML won the challenge with a success rate of 46%.

And AIML researchers Dr Yanyuan Qiao, Zerui Li, Jingxing Cao, Gengze Zhou, and Associate Professor Qi Wu won 3rd prize at the Large Robotics Model and Embodied AI Challenge at the CCF Chinasoft Conference in Shanghai in December.

2024

Dr Kathy Nicholson, AIML's Institute Manager, was re-appointed to the Board of Directors at Science & Technology Australia (STA). Dr Nicholson has been a member of the STA Board since 2019 and is excited to continue her work with the group.

AIML researcher Dr Dhani Dharmapranjani took home the University of Adelaide STEM Award for her work in revolutionising cardiac health at the 2024 South Australia's Young Achiever of the Year.



Channel 7 Young Achiever Awards recipients, including AIML Future Making Fellow Dr Dhani Dharmapranjani bottom right (in black).

independent optimisation sub-problems that can be more easily solved. Dr Märtens created and led the Spacekangaroos team which also included Professor Frank Neumann, Denis Antipov, Aneta Neumann, and Xiankun Yan, all from the University of Adelaide's School of Computer and Mathematical Sciences.

AIML members Dr Feras Dayoub, Professor Simon Lucey, Dr Ravi Garg, Dr Savitha Sam Abraham, and Dr Ehsan Abbasnejad, along with Associate Professor Belinda Chiera, Deputy Director of the UniSA Industrial AI Research Centre, were accepted into the CSIRO Next Generation Graduates Program for their honour's course, "Continual learning and adaptation of resilient vision models in uncertain real-world environments." The Next Generation Graduates Program is a cohort-based, industry driven, multi-disciplinary graduate training program that aims to equip students with entrepreneurial thinking and skill sets that are key to boost breakthrough innovation in the exciting fields of AI and other emerging technologies.

AIML researcher Dr Wei Zhang was named a finalist in the Women in AI (WAI) APAC awards 2024 in the AI in Agribusiness and Rural Development category. She was also a recipient of the 2024 South Australian Young Tall Poppy Science Awards. The Young Tall Poppy Science Awards, recognise and celebrate early-career Australian scientists who excel in their research and are passionate about communicating their work to the public.

AIML Researcher Dr Marcus Märtens and his team of 'Spacekangaroos' placed third at the latest Space Optimization competition (SPoC3) organised by the European Space Agency (ESA). The competition took place online over three months from 1 April to 30 June 2024. The Spacekangaroos not only placed third overall but came first in the 'torso decomposition' sub-challenge, a difficult optimisation challenge that 'decomposes' a monolithic optimisation problem into



2024 Young Tall Poppy Award recipients including AIML Senior Lecturer Dr Wei Zhang back left (in black).

AIML Senior Lecturer Ehsan Abbasnejad and Chief Scientist Professor Anton van den Hengel were announced as finalists in the Australian AI Awards in the AI Academic/Researcher of the Year and AI Leader of the Year – SME categories respectively.

2025

Zachary Shinnick, AIML post-graduate researcher, was awarded a 2025 Westpac Future Leaders Scholarship. Shinnick will use the scholarship to support his research in machine learning to create better outcomes for people in aged care. "Australia's rapidly ageing population needs technological advancements to support the healthcare workforce and improve aged care services," says Shinnick. "By leveraging machine learning it will be possible to better assess and respond to the needs of elderly patients, significantly enhancing their quality of life."

AIML Deputy Director Dr Melissa McCradden was appointed Chair of the AI Governance Committee at the Women's and Children's Health Network (WCHN). The committee will ensure the development of safe, ethical, and meaningful integration of AI technologies across all WCHN services and is the first of its kind in South Australia. "We are so excited to be launching the AI Governance Committee at WCHN, which will provide institutional guidance and oversight for health AI" across the network, said Dr McCradden. "Our goal is to enable AI research... as we pursue innovation to improve how we deliver care."

AIML Research Fellow Dr Xinyu Zhang won in the Education/Research category at the 2025 Women Leading Tech Awards in Sydney on 28 March 2025. Presented by Atlassian, these awards celebrate the women who drive innovations and forge bold new paths for others to follow.

AIML Senior Clinical Lecturer Dr Emily Kirkpatrick was appointed to the Board of Directors to the South Australian branch of the Australian Medical Association (AMA SA).

Professor Lyle Palmer was appointed a co-lead of the Technology Work Group for the Global IBD Registry (GLIDE) initiative convened by the Crohn's & Colitis Foundation. GLIDE brings together experts and organisations from around the world to work collaboratively on inflammatory bowel disease (IBD) research.

AIML Deputy Director Dr Melissa McCradden was named a finalist in the 40 Under 40 Awards. Hosted by InDaily and CityMag, the awards recognise South Australia's rising leaders who are making outstanding contributions across business, innovation, and community.



AIML Deputy Director Dr Melissa McCradden at InDaily's 40 Under 40 Awards, 19 June 2025.

AIML PhD graduates Dr Chong Wang and Dr Chaorui Deng were awarded a University of Adelaide Research Medal. Dr Wang was awarded for his interdisciplinary research on developing trustworthy, robust, and data-efficient solutions for medical diagnosis and intervention, under the supervision of Professor Gustavo Carneiro. Dr Deng, under the supervision of Associate Professor Qi Wu, was awarded for his research in vision-and-language applications, multimodal representation learning, and open vocabulary recognition.

AIML researchers Dr Yuan Zhang and Dr Tim Chen were recognised as finalists of the 2025 South Australian Science Excellence and Innovation Awards as part of the IMAGENDO® team. The SA Science Excellence and Innovation Awards

recognise and celebrate the outstanding contributions and achievements of South Australia's leading Science, Technology, Engineering, Mathematics, and Medicine (STEMM) professionals, while shining a spotlight on the social, economic, health, and environmental impact of their work. Dr Zhang also recently presented her work on the IMAGENDO® project at the Australia and New Zealand Society of Reproductive Endocrinology and

Infertility Conference (ANZSREI 2025) held on 25–27 July in Sydney, on how AI-powered imaging can enhance the diagnosis of endometriosis and better integrate clinical expertise with machine learning.

AIML Chief Scientist Professor Anton van den Hengel and Responsible AI Research (RAIR) Centre Director Professor Javen Shi, along with their co-authors Professor Julian McAuley and Christopher Targett, received the 2025 Association for Computing Machinery (ACM) Special Interest Group on Information Retrieval (SIGIR) Test of Time Award. The group received the award for their paper, "Image-based Recommendations on Styles and Substitutes." The SIGIR Test of Time Award recognises research that has had a lasting influence, whether within a subarea of information retrieval, across the broader field, or beyond academia into industry and other disciplines.

AIML Senior Lecturer Dr Wei Zhang won in the Data Science/AI Pioneer Award category of the 2025 Women of Colour in STEM Awards. The Women of Colour in STEM Awards, an initiative of STEM Sisters, celebrate the outstanding achievements of women of colour in STEM education, research, and leadership.

Top Research Grants and Funding for 2023-2025

Throughout the reporting period, AIML researchers, academics, and students were awarded a number of prestigious grants and fellowships, further cementing AIML's position as a top AI research institute in Australia.

2023

Analytics for the Australian Grains Industry

Analytics for the Australian Grains Industry (AAGI) is a five-year strategic partnership aimed at harnessing analytics to drive the sector's profitability and global competitiveness. AAGI awarded The University of Adelaide \$12 million, including \$1.93 million for AIML to provide ML research and engineering capability.

ARC Early Career Industry Research Fellow

Dr Wei Zhang was awarded an Early Career Industry Research Fellow, valued at \$501,000 over three years. Dr Zhang's research focuses mainly on big data analytics, text mining, machine learning and Internet of Things (IoT), including the development of a portable, automated system for the cultivation of mushrooms.

Asian Office of Aerospace Research and Development (AOARD)

Professor Tat-Jun Chin has secured grant funding from the Asian Office of Aerospace Research & Development (AOARD) to undertake a research project on physical adversarial attacks against ML models for satellite imagery. The project, valued at \$330,000, will continue until 2025, and a portion of the funding will be used to offer a master's degree scholarship valued at \$33,000 per annum.

The Hospital Research Foundation

In July, Dr Zhibin Liao was awarded \$125,000 from the Hospital Research Foundation to undertake research on advancing the imaging diagnosis of juvenile idiopathic arthritis with deep learning. And Dr Melissa McCradden was awarded the Hospital Research Foundation Fellowship, valued at \$750,000, for the period 2023-2029. Dr McCradden's research focuses on sport ethics, specifically concerning youth athletes and sport violence, and the integration of paediatric bioethics concepts into youth sport.

2024

AIML 2.0 funding

The Honourable Peter Malinauskas, Premier of South Australia, announced in May that his government was investing \$6 million into AI research and development at AIML. The funding, to be matched by the University of Adelaide and dispensed over four years, will help position the new Adelaide University at the forefront of AI research nationally and provide exciting research career opportunities for South Australians.

Established in September 2024 with a [A\\$6 million investment](#) from the Commonwealth Bank of Australia, the CommBank Centre for Foundational AI Research represents the largest corporate investment in AI in Australian history. In December, the Responsible AI Research (RAIR) Centre received a [\\$20 million investment](#) from CSIRO, the South Australian Government, and the University of Adelaide. In total, the RAIR, Industrial AI, and CommBank initiatives represent more than \$33 million in investment in AI research at AIML in 2024.



(L-R) University of Adelaide Vice-Chancellor and President, Peter Høj; Michael Brown, MP; John Whittle, Director of CSIRO's Data61; The Hon Susan Close MP, Deputy SA Premier; Dr Kathy Nicholson, AIML Institute Manager; Professor Simon Lucey, AIML Director; Andy Dunbar, Executive Director of the Research and Innovation Group for the government of South Australia; Professor Aaron Quigley, Science Director and Deputy Director of CSIRO's Data61 at the RAIR Centre event launch at AIML on Monday, 9 December 2024.

ARC Linkage

AIML members Alec Arthur, Aaron Peter Poruthoor, and Dr Greg Ruthenbeck were awarded an ARC Linkage recipient for their work on the project Real-time detection of Asbestos in the field. The project, led by Professor Nigel Spooner from the School of Physics, Chemistry and Earth Sciences, was awarded \$675,816 AUD in funding and seeks to develop a new portable device that can be used to detect asbestos in homes or workplaces. Developing this mechanism could have significant public health benefits by reducing the public's exposure to hazardous asbestos dust.

Discovery Early Career Researcher Award (DECRA)

Dr Wei Zhang was awarded a DECRA and \$426,605.00 AUD to exploit unused underground optical fibre cables that are ubiquitous in cities. The result will be low-cost and ready-made distributed sensing systems that protect critical water supplies, supported by intelligent data analytic algorithms that can translate real-time data into valuable information to optimise water asset monitoring.

ARC Discovery Project

Senior Lecturer Ehsan Abbasnejad and Professor Javen Qinfeng Shi were awarded an ARC Discovery Project, Learning to Reason in Reinforcement Learning. This project, valued at \$544,551, aims to narrow the gap between AI and human capabilities and broaden the adoption of reinforcement learning in real-world applications.

ARC Discovery Project

AIML members Dr Wei Zhang and Dr Weitong Chen were part of a team awarded \$318,963.00 to develop data analytics techniques that can extract accurate information in complex structures from imperfect/incomplete data that changes over time.

NHMRC Ideas Grant

AIML Senior Lecturer Dr Tim Chen and post-doctoral researcher Dr Yuan Zhang were members of the IMAGENDO® team awarded a National Health and Medical Research Council (NHMRC) Ideas Grant. The

team, led by Dr Jodie Avery of the Adelaide Medical School and Robinson Research Institute, was awarded \$1,978,271 to enhance outcomes for young people with endometriosis through diagnostic delay reduction.

Theo Murphy Initiative grant

AIML members Deputy Director Dr Melissa McCradden, Associate Professor Qi Wu, Professor Dino Sejdinovic, and Manager for Projects and Strategic Partnerships, Jessica Cortazzo (née Neong) along with CSIRO's Data61 colleagues Petra Kuhnert, Sarah Hartman, Emma Schleiger, Qinghua Lu, Muneera Bano, Sarah Vivienne Bentley, Rifat Ara Shams and Professor Aaron Quigley have been awarded \$48,500 AUD to establish the Next Generation Responsible AI symposium that will foster cross-disciplinary collaborations and advance the development of responsible AI.

Franco-Australian Centre for Energy Transition (FACET)

Dr Ehsan Abbasnejad, Future Making Fellow at AIML, contributed to an international research initiative aimed at improving the durability and efficiency of electrical grids. Funded by the Franco-Australian Centre for Energy Transition (FACET) with over \$350,000 AUD in support, this collaboration unites experts from the University of Adelaide and Université Grenoble-Alpes, a public research university in Grenoble, France. The project focuses on leveraging AI and ML to develop innovative solutions for managing complex power systems in sustainable ways.

2025

Australia's Economic Accelerator (AEA) Ignite Grants

AIML members Dr Yuan Zhang and Dr Tim Chen, Robinson Research Institute investigators Professor Louise Hull and Dr Jodie Avery, and the entire IMAGENDO® team have been awarded \$498,291 AUD in funding from the Australia's Economic Accelerator (AEA) Ignite Grants. The AEA Ignite Grants support high-impact research and commercialisation projects across Australian universities. The funding will support the IMAGENDO® study which is pioneering the use of AI and machine learning to reduce diagnostic delays for endometriosis.

Australia's Economic Accelerator (AEA) Grant

AIML Future Making Fellow Dr Dhani Dharmapran and her collaborators—including Lead Entrepreneur Associate Professor Martin Donnelley from the University of Adelaide; partner entrepreneur 4DMedical; and collaborating entrepreneurs Associate Professor Kris Ehinger and Professor Tom Drummond from the University of Melbourne—were awarded a \$3.8 million Innovate grant from Australia's Economic Accelerator (AEA). Their project, "Commercialisation of novel AI-assisted functional imaging technologies for understanding lung disease," seeks to expand the commercialisation of AI-assisted imaging technologies.

National Industry PhD Program

AIML Senior Lecturer Dr Feras Dayoub, Associate Professor Johan Verjans, and Senior Research Fellow Dr Zhibin Liao secured funding in Round 5 of the Australian Government's National Industry PhD Program in the Industry Linked PhD stream. The funding will provide scholarships and research support to prospective PhD students to undertake one of two groundbreaking applied research projects in collaboration with government and industry partner Lockheed Martin Australia.



AIML postdoctoral researcher, Dr Yuan Zhang

Reconstruction and Visual Perception, aims to develop frameworks that interpret images by generating them, enabling robotic agents to plan and execute desired actions with precision and strengthening Australian AI sovereignty.

ARC Discovery 2026

AIML Associate Professor Qi Wu and Lecturer Dr Xinyu Wang were awarded funding through the Australian Research Council's Discovery Program for 2026 for their project, Enhancing Vision-Language Models with Game-Based Reasoning and Evaluation. This project aims to enhance Large Vision-Language Models by developing innovative evaluation tools and training methods that focus on complex reasoning, decision-making, and adaptability improving the models' ability to understand and solve intricate, real-world problems.

2025 Research Accelerator Grant

AIML and Robinson Research Institute (RRI) postdoctoral researcher Dr Yuan Zhang has been awarded the 2025 Research Accelerator Grant from the Lloyd Cox Obstetrics & Gynaecology Research Fund to support her work on developing expert-labelled female pelvic MRI datasets for anatomy-aware AI in women's health. Building on the IMAGENDO® initiative, this project aims to create foundational data for more interpretable, equitable, and scalable diagnostic AI tools for endometriosis, with the potential to expand to other gynaecological conditions.

ARC Discovery 2026

AIML Director Professor Simon Lucey and Future Making Fellow Dr Ravi Garg were awarded funding through the Australian Research Council's Discovery Program for 2026. Their project, Building Generative Models for 3D

Top Publications for 2023-2025

AIML continues its tradition of publishing our world-class research in some of the world's most prestigious journals and conferences, including the Conference on Computer Vision and Pattern Recognition (CVPR); the Annual Conference on Neural Information Processing Systems (NeurIPS); and the International Conference on Learning Representations (ICLR).

In 2023, AIML members authored 278 papers in leading international journals and conferences, making notable contributions to global conversations around AI and ML. In 2024, our members authored 302 publications, and in 2025 our members have authored 109 publications, including 40 publications accepted into journals, as of September 2025.

Here is a sampling of some member publications. Names in bold are AIML members.

2023

Lana Tikhomirov, Simon Lucey, Anton van den Hengel, Elanor Huntington, Jon Whittle, Stela Solar, Michael Milford, Carolyn Semmler, Katrina Falkner, Rocky Chen, Andrew Dettmer, Kylie Walker, Mary-Anne Williams, Kingston AI Group, Ian Opperman. *Responsible AI: Your questions answered*. The Australian Academy of Technological Sciences and Engineering (ATSE) and the Australian Institute for Machine Learning (AIML). November 2023

Ziqin Zhou, Yinjie Lei, Bowen Zhang, Lingqiao Liu, Yifan Liu. Zegclip: *Towards adapting clip for zero-shot semantic segmentation*. Published in the Conference on Computer Vision and Pattern Recognition (CVPR) 2023

Liang Chen, Yong Zhang, Yibing Song, Ying Shan, Lingqiao Liu. *Improved test-time adaptation for domain generalization*. Published in CVPR 2023

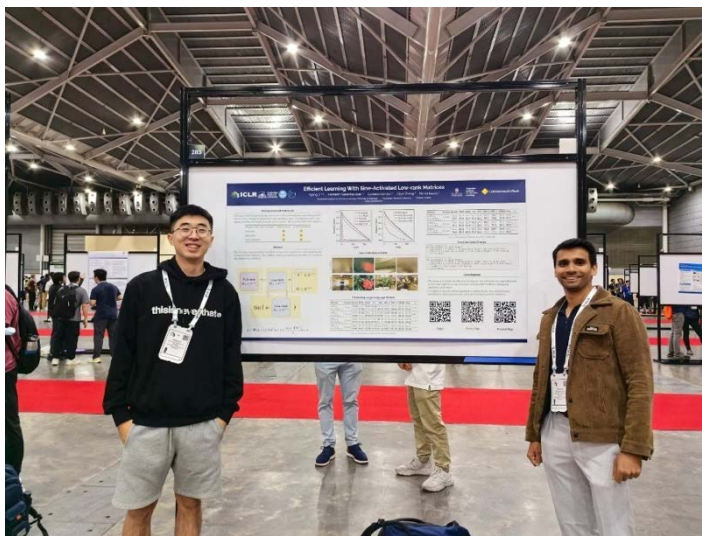
Melissa McCradden, Oluwadara Odusi, Shalmali Joshi, Ismail Akrou, Kagiso Ndlovu, Ben Glocker, Gabriel Maicas, Xiaoxuan Liu, Mjaye Mazwi, Tee Garnett, Lauren Oakden-Rayner, Myrte de Alfred, Irvine Sihlahla, Oswa Shafei, Anna Goldenberg. *What's fair is... fair? Presenting JustEFAB, an ethical framework for operationalizing medical ethics and social justice in the integration of clinical machine learning: JustEFAB*. Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency

Damien Teney, Yong Lin, Seong Joon Oh, Ehsan Abbasnejad. *ID and OOD Performance Are Sometimes Inversely Correlated on Real-world Datasets*. 37th Conference on Neural Information Processing Systems (NeurIPS 2023)

2024

Melissa McCradden and her co-authors have two important articles on the STANDING (STANdards for data Diversity, INclusivity and Generalisability) Together initiative representing more than 350 experts from 58 countries. Two articles have been published. One is the "Tackling algorithmic bias and promoting transparency in health datasets: [the STANDING Together consensus recommendations](#)" in The Lancet Digital Health. A second article has been published in the journal *Nature Medicine* (Nature Portfolio) entitled, "[Exploring patient and public participation in the STANDING Together initiative](#) for AI in healthcare."

Anton van den Hengel, Zhedong Zhang, Liang Li, Gaoxiang Cong, Haibing Yin, Yuhao Gao, Chenggang Yan, and Yuankai Qi. *From Speaker to Dubber: Movie Dubbing with Prosody and Duration Consistency*



AIML PhD student Yiping Ji and senior researcher Dr Hemanth Saratchandran in front of their CVPR2025 poster on their study titled 'Efficient Learning with Sine-Activated Low-rank Matrices.'

Learning. Best Paper Award at the 32nd ACM International Conference on Multimedia in Melbourne (ACMM2024)

Avi Chapman, Dr Hai-Ming Xu, Lingqiao Liu. *Enhancing Fine-Grained Visual Recognition in the Low-Data Regime Through Feature Magnitude Regularization* Best Student Paper Award at the Digital Image Computing: Techniques and Applications (DICTA) Conference last November

Lana Tikhomirov, Carolyn Semmler, Melissa McCradden, Marzyeh Ghassemi, Lauren Oakden-Rayner. *Medical artificial intelligence for clinicians: the lost cognitive perspective*. The Lancet Digital Health

Raphael Lafargue, Luke Smith, Jack Valmadre, Ian Reid. *Oops, I Sampled it Again: Reinterpreting Confidence Intervals in Few-Shot Learning*. Transactions on Machine Learning Research (TMLR)

2025

Xiangyu Shi, Yanyuan Qiao, Lingqiao Liu, Feras Dayoub. *Embodied Domain Adaptation for Object Detection*. Accepted at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2025

Xiangyu Shi, Zerui Li, Jiatong Xia, Feras Dayoub, Yanyuan Qiao, Qi Wu. *SmartWay: Enhanced Waypoint Prediction and Backtracking for Zero-Shot Vision-and-Language Navigation*

Yuan Zhang, Yutong Xie, Hu Wang, Jodie Avery, Louise Hull, Gustavo Carneiro. *A Novel Perspective for Multi-modal Multi-label Skin Lesion Classification*. Accepted at the Winter Conference on Applications of Computer Vision (WACV)

Paul Albert, Frederic Zhang, Hemanth Saratchandran, Cristian Rodriguez Opazo, Anton van den Hengel, Ehsan Abbasnejad. *RandLoRA: Full-rank parameter-efficient fine-tuning of large models*. Accepted at ICLR

Yiping Ji, Hemanth Saratchandran, Cameron Gordon, Simon Lucey. *Efficient Learning with Sine-Activated Low-rank Matrices*. Accepted at ICLR.

Lyle Palmer. *Co-designing a public health data analytics platform*. Nature Medicine

Further enquiries

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