uniservices+
IDEAS TO LIFE RANGAHAUA KIA WHAI HUA

Artificial Intelligence

Artificial Intelligence (AI) is emerging everywhere today: as virtual assistants on your smartphone, advisors to help make investment decisions, driving autonomous vehicles on our roads, and in sophisticated algorithms underlying recommendation engines for many of the world's leading web platforms.

Governments and industry are competing to establish superior AI research, seeing AI as a lever for greater economic influence and power. We're also in the early stages of drastic shifts in the labour market.

As NZ's leading university, the University of Auckland has ample capability in this ever-growing area with over 100+ active researchers from all disciplines.

At UniServices we are eager to bring your ideas to life and help you connect with the future today.

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

Data Science and AI capability at the University of Auckland

Computer Science

Centre for eResearch

The Centre's core mission is: (i) to grow strategic research infrastructure and resources, (ii) to create effective and efficient computing services and workflows to support research and (iii) to provide consultancy and help researchers who need to use advanced computing tools in their research. We are also committed to providing training opportunities that help researchers learn new computing skills, and community outreach to create a vibrant and supportive culture of digitally-empowered scholarship.

Intelligent Systems and Informatics Group

With the dawn of the information age arose the problem of dealing with huge quantities of heterogeneous data. Not only are there numerous databases and information systems available locally nowadays, but information is spread over the internet with access worldwide. The aim of our group is the development of new intelligent methods and techniques to deal with this problem.

Theory Research Group

We study theoretical computer science, the branch of computer science that focuses on the abstract, mathematical nature of computation.

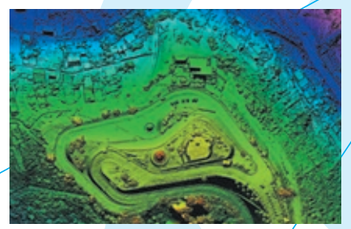
Our main interests lie in the general areas of automata theory, computational biology, computational complexity, computability and randomness, design and analysis of algorithms, and unconventional models of computation.

Cyber Security Foundry

A hub for world-leading technical expertise, industry collaboration, training of security professionals, and the development of new security solutions.

Statistical computing (R Project)

The R Project is a language and environment for statistical computing and graphics. It is widely taught around the world and is being used by Ivy League Universities, Google, our second-year Statistics students, and even by school children.



Complex Systems - Te Pūnaha Matatini

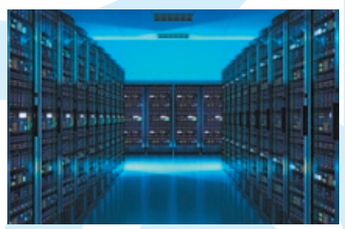
Te Pūnaha Matatini – 'the meeting place of many faces' – is a Centre of Research Excellence hosted by the University of Auckland that will develop methods and approaches for transforming complex data about New Zealand's environment, economy, and society into knowledge, tools, and insight for making better decisions.

Centre for Computational Evolution

The Centre brings together researchers who share an interest in developing software tools and mathematical models for understanding evolution and molecular ecology from genes to genomes. This approach spans fields as diverse as linguistics, ecology, the origin of life and epidemiology.

Intelligent Vision Systems

Developing intelligent vision systems to detect, classify, or retrieve natural 3D objects under varying imaging conditions and operating environments is one of the most challenging artificial intelligence and computer vision problems having considerable practical interest. In particular, computer stereo vision can serve as an important tool in photogrammetry, cartography, civil engineering, mining, forensics, archaeology, biometrics, autonomous navigation, augmented reality, game industry, special movie effects, etc.



Statistics

National Institute for Health Innovation

Informatics and health technology expertise enables the development and assessment of new approaches to the use of health information to shed light on health problems, and trial the use of information technology to drive and scale up e-health and telehealth across healthcare systems.

Precision Driven Health

Created to provide world-leading research into the emerging area of precision health. This involves applying new data science techniques to understanding the massive volume of data on an individual that is being captured by health information systems, consumer devices, social networks, genetic testing and other sources.

Bioinformatics Institute

A research and education centre bringing together biosciences, health sciences, computer science, mathematics, and statistics to understand complex datasets. The Institute is based in the Faculty of Science and affiliated with the Faculty of Medical and Health Sciences.

Engineering

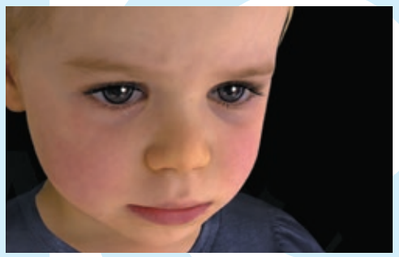
Operations Research and Computational Analytics

Analytics is the capture, management, organisation, and visualisation of data to inform better decision-making. Computational Analytics embeds these data into a mathematical/statistical model that enables the decision-making process to be automated and/or optimised. Computational Analytics is the science behind data-driven decision-making in the real-world.

Centre for Automation and Robotic Engineering Science (CARES)

CARES is an interdisciplinary research hub with a mission to create inspiring and innovative robotic technologies that improve societal well-being.

Auckland Bioengineering Institute



Biomedical Informatics

The aim of our group is to link clinical information and workflows to computational models and tools, in order to bring about personalised, predictive and quantitative approaches to Biomedicine, and help realise the Physiome Project/Virtual Physiological Human initiatives.

Physiome Project

The Auckland Bioengineering Institute (ABI) pioneers the development of mathematical models of human physiology and new instrumentation techniques for a wide variety of healthcare applications. ABI's vision is to provide virtual human models which can be personalised and used, with new medical devices, as the basis for improved and lower cost healthcare.

The Empathic Computing Laboratory

Empathy is about seeing with the eyes of another, listening with the ears of another and feeling with the heart of another. Empathic Computing is a research field that develops computer systems that recognise and share emotions and help people better understand one another. The Empathic Computing Laboratory is working to make empathic computing mainstream and uses advanced technology such as Augmented and Virtual Reality, EEG, and physiological sensing to enhance face to face and remote collaboration.

Education

Data Science courses

On the world stage, data science is a rapidly growing field with an unmet demand for suitably qualified graduates. Big data is ubiquitous, but to extract information individuals require the ability to both manage – and analyse – the data.

Since 2017, the Data Science major provides initial preparation for students wishing to pursue a career in this area. It ties together courses from Computer Science and Statistics to provide the necessary background and training in these fields, along with Mathematics.

Quantitative Data Analysis and Research (Quant-DARE)

The Quantitative Data Analysis and Research (Quant-DARE) provides expertise in quantitative data analysis and research support to (1) develop and validate educational measurement instruments; (2) advance quantitative research and data analytic methods in education within New Zealand and internationally.

Business School

Information Systems and Operations Management (ISOM)

One of the leading departments in information systems and operations management in the Asia-Pacific region, this Department is well known for its excellence in teaching and research.

Centre for Supply Chain Management (CSCM)

Our mission is to develop and disseminate world-class knowledge and practices in supply chain management applicable to Australasian economies by fostering cooperation, collaboration and communication among academic researchers, educators and industry practitioners.

Center of Digital Enterprise (CODE)

A multi-disciplinary research centre, which focuses on the area of digital technologies' application in organisations and digital transformation of business and society in New Zealand.

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UNISERVICES BY THE NUMBERS

10 BUSINESSES created to commercialise University research in 2017

$115m REVENUE in 2017

75+ PATENTS LICENSED in 2017

710 INVENTION DISCLOSURES in the last 5 years

$148m INVESTMENT raised by spin-out companies in the last 5 years

270+ PATENTS LICENSED in the last 5 years

$1.22b Cumulative revenue in the last 10 years

CLIENTS IN OVER **60** COUNTRIES

60 RESEARCH CENTRES AND INSTITUTES across the University

UniServices partners with the University of Auckland to:

- Support researchers and help them grow their research portfolios, increasing the impact of research on society and expanding the value of research outputs.
- Develop mutually-beneficial relationships with research funders and commercial clients, bringing the external worldview into the University research environment.
- Identify, protect and develop the intellectual property of the University that arises from world-class research.
- Commercialise University-sourced technology and innovations, developing and investing in the commercial potential of new ideas produced by University staff and students.
- Deliver social and economic benefits of research outputs to the wider community across New Zealand.

The University of Auckland

The University supports economic growth locally and nationally through innovation and entrepreneurship, creating quality jobs and high-value businesses, producing graduates that contribute to and strengthen our economy and society, to the benefit of all. The University of Auckland is New Zealand's world-ranked university. It is the leading New Zealand university in the QS World University Rankings 2019* and the highest ranked New Zealand university in the Times Higher Education World University Rankings.†

UniServices

At UniServices, we bring ideas to life. We partner with the best minds at the University of Auckland to apply intelligent thinking to ideas that have the potential to change the world.

Together with our partners, we look to the future, imagine the possibilities, and innovate for public and private good. For over 30 years, we've collaborated with hundreds of organisations on thousands of projects in New Zealand and around the world.

We are the most innovative university in New Zealand in Reuters' Top 75: Asia's Most Innovative Universities rankings.‡ We have also been identified by a Massachusetts Institute of Technology (MIT) study as one of the world's leading entrepreneurial universities "under challenging conditions" (MIT Skoltech Initiative).§

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* http://tiny.cc/QS_UOA
† http://tiny.cc/Times_Rankings
‡ http://tiny.cc/Reuters_Top75
§ http://tiny.cc/MIT_Report

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