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World leading experts to spearhead \$20m of vital space sector R&D investment by SmartSat CRC

In a \$20m investment, nine professorial Chairs have been established by SmartSat and its partner universities in artificial intelligence, optical communications and cybersecurity for the development of next generation space technologies to stimulate Australia's economic growth in space.

Adelaide University, Swinburne University and University of South Australia are the first universities to announce three professorial chairs today. These experts will drive new frontier research in artificial intelligence for satellite systems and new space cyber security technologies.

The trio, **Professors Tat-Jun Chin, Christopher Fluke and Jill Slay**, will form a Research and Development advisory group to refine the SmartSat research program in priority areas for space systems research and development, and boost the translation of research for industry application. A further six professorial chairs will boost this first-of-its-kind space R&D initiative, with the Australian National University, Sydney University, and the University of NSW also taking part in this nation-building space capability development along with future appointments from University of South Australia.

SmartSat CEO, [Professor Andy Koronios](#), says the appointment of the Professorial Chairs is a significant step towards growing Australia's space capabilities and expertise and to strengthening international collaboration.

"We are thrilled to announce the appointment of these outstanding Professorial Chairs who will grow SmartSat's national knowledge network and extend important existing international connections to our research programs," Prof Koronios says.

"SmartSat is committed to attracting high calibre researchers who have strong track records in leading translational research and proven experience in contributing to Australia's space research performance. We're confident these Professorial Chairs will accelerate the progress of our research portfolios in vital areas for our space industry and for national security. "

Professor Anton Middelberg, Deputy Vice-Chancellor and Vice-President (Research) of the University of Adelaide confirmed that Assoc Prof Tat-Jun Chin is an international leader in AI and machine learning for space applications.



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THE UNIVERSITY
of ADELAIDE



SWINBURNE
UNIVERSITY OF
TECHNOLOGY



University of
South Australia

“As a global leader, it is very appropriate **Tat-Jun Chin** brings his extensive knowledge of advanced space system autonomy, intelligence and decision making, on-board machine learning and AI technology to SmartSat CRC,” Professor Middelberg said.

“The mandate of CRCs is to develop sustainable new industries. This requires the right people to fill future jobs and in addition to his global leadership, TJ brings the inspiration and mentorship to build a dedicated CRC activity to deliver next-generation space technologies.”

Deputy Vice-Chancellor (Research and Enterprise) at Swinburne, Professor Bronwyn Fox, says the appointment of the professorial chairs will enhance the impactful research of the SmartSat CRC and drive the growth of the emerging Australian space sector.

“Astrophysicist Professor Fluke is a highly respected interdisciplinary researcher and his collaborative approach coupled with his advanced visualisation and data expertise will be important for tackling the unique industry problems that the SmartSat CRC will address.”

“Swinburne’s world-leading expertise in astronomical data processing and visualisation, machine learning and AI techniques, and our internationally recognised Industry 4.0 capabilities will help to develop space technologies that will transform our industries and society.”

Deputy Vice Chancellor for Research and Enterprise at the University of South Australia, Professor Marnie Hughes-Warrington says global demand for secure systems of communication can be met through smart investment in people.

“As a proud partner of SmartSat, UniSA is delighted to be working with the CRC to make a significant investment in capability,” she says.

“Jill Slay’s expertise is internationally respected and she will make a significant contribution through her knowledge, networks and her leadership in teaching and research.”

An industry focused doctoral program through SmartSat will further build Australia’s space high-tech knowledge. Five PhD scholarships have already been approved with a further six under consideration with a total goal of more than 70 PHDs over seven years.

BIOGRAPHIES: PROFESSORIAL CHAIRS

Professorial Chair of Sentient Spacecraft, the University of Adelaide’s **Assoc Prof Tat-Jun Chin** will build Australia’s largest research group dedicated to AI and machine learning for space and actively seek to partner with industry to ensure timely transfer of the research outputs to industry. Recently, Tat-Jun led the team that won the global POSE challenge organised by the European Space Agency and Stanford University last year, beating many international teams. Winning the challenge, which was to use machine learning to estimate the relative position and attitude of a known spacecraft from individual grayscale images, cemented his position as a global leader in his field.



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A leading international researcher in data-driven astronomy visualisation from Swinburneas Professorial Chair of Space System Data Fusion and Cognition, **Prof Christopher Fluke** will further develop capabilities in real-time, data-driven discovery and decision-making, and form collaborations with experts in artificial intelligence and machine learning, skilled performance, human factors research, cognitive assessment, and user-centred design.

University of South Australia's **Prof Jill Slay** is the new Professorial Chair of Cyber Security. Prof Slay is currently Theme Leader of SmartSat's Cyber Security & Resilience program. Her expertise in cyber security and critical infrastructure protection teaching and research will strengthen links to leading international research centres and build capability this critical area.

ABOUT THE SMARTSAT CRC

The SmartSat Cooperative Research Centre brings together over 100 national and international partners who have invested over \$190 million, along with \$55 million in Federal Government funding under its Cooperative Research Centres Program, in a \$245 million research effort over seven years. Working closely with the Australian Space Agency, SmartSat will make a strong contribution to the Australian Government's goal of tripling the size of the space sector to \$12 billion and creating up to 20,000 jobs by 2030. Priority industry sectors for SmartSat include telecommunications, agriculture and natural resources, transport and logistics, mining, and defence and national security.

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