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Artificial intelligence a game-changer for future jobs

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By Melissa Keogh

From complex software systems that sort through medical data, to drones that monitor crop health, South Australian industries are embracing the impact of artificial intelligence (AI) and cutting edge technologies.

International AI expert Dr John Flackett says SA is well placed to adopt AI and machine learning in health care, defence and agriculture sectors, providing new job pathways for future generations.

According to Dr Flackett, an AI researcher and co-founder of start-ups [koolth](#) and [AiLab](#), we're ready for the transformation but need to ensure we have policy and regulation in place.

"We have a really forward thinking start-up economy in SA and we have people interested in innovation," he says.

"There are some fine opportunities for using AI, if we look at space, agriculture, tourism and healthcare. Having doctors look at hundreds, even thousands of x-ray images to try and spot cancers or health issues, when we can train machines to do that work in a fraction of the time.

"But I think it's really important that when we apply AI to sectors such as healthcare we don't take the human out of the link totally. When we're using AI tools and techniques we have to think carefully about the way we're using the technology."



Dr John Flackett's Adelaide-based AiLab assists individuals, academia, industry, communities and governments worldwide on how to navigate the complex field of AI.

The gradual take-up of new-tech is slowly making its way into workplaces, with the demand for AI talent set to grow in the state as entrepreneurship and innovation become key career opportunities in the future.

A number of industries and businesses are already thriving with AI and machine learning technologies including Adelaide-based company Presagen which recently raised \$4.5 million in seed funding to market its AI medical technology that improves fertility outcomes for IVF couples.

The product, [Life Whisperer](#), uses a cloud-based analysis platform that improves the accuracy of healthy embryo selection in IVF treatments.

AI-driven technologies are also emerging in the agricultural industry, with drones carrying sensors and infrared mapping capabilities used to assess crop health and give a clearer picture of crop yield.

Dr Flackett, also a software engineer, has more than 20 years' experience in AI, achieving a PhD in AI (machine learning and natural language processing) in 2005. Migrating to Australia from the UK around the same time, he co-founded smart web specialist company koolth before embarking on his second business venture, AiLab, with co-founder Emma Berry.

Dr Flackett regularly runs AI workshops and presents at events in the UK, Europe, the US and Australia to help demystify the world of AI and educate people on how it can empower businesses and transform how we live. The role of AiLab is to assist individuals, academia, industry, the community and government across the globe on how to navigate the complex field of AI and stay up to date with relevant progressions via education programs.

Dr Flackett says the field of AI – a term coined in the 1950s – is thriving "because humans have always wanted to automate tasks and build machines that can help".

"AI as a field is really about that lofty goal of 'can we build machines that are as intelligent as us?' That's called artificial general intelligence," he says.

While Dr Flackett believes that the take-up of AI will be a huge disrupter to industry and workplaces, the key is to "not take the human out of it".



AI is used in the ag-tech industry through drones that can assess crop health and give a clearer picture of crop yield.

"Personally, my approach is to embrace the advances and work with the technology. But you can't take the human out of the process. You can't get that personal customer experience with AI, so we need to be looking at AI to help inform our decisions, free up our time to interact with people and collaborate with others.

"The thing about automation and AI is that it drives a collaborative approach to jobs. For instance, the development of smart drones ... in order to build such a system, many companies need to collaborate. If we're producing AI-based image recognition technology we probably wouldn't want to build the actual drone so we'd collaborate with a company that builds drones and then we'd supply the AI software skillset.

"I think that's what we'll start to see around future jobs, those skills sets of people being able to collaborate and communicate."

Dr Flackett, who recently founded and organised Adelaide's Artificial Intelligence meetup series, sponsored by AiLab and the Australian Institute for Machine Learning, says more work is to be done to encourage more investment into AI in Australia, and to develop policy and regulation.

He says SA is already ahead in nurturing talent for transforming industries as we have a highly skilled workforce that is ready to transfer its skills into emerging industries such as space and ag-tech.

Dr Flackett also explains that future employment pathways for today's young people are likely to be varied and take more than one route.

"I refer to future jobs rather than future careers," he says. "The career path that we're used to is disappearing ... according to the FYA (Foundation for Young Australians) people leaving school are going to have 17 different jobs, that whole career for life is virtually gone now.

"What we need to do is leverage the skills we already have, and transfer these skills to a rapidly changing workplace."

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Embracing innovation, creativity and an understanding of building quality partnerships with technology is key to ensuring career opportunities in the future. SA is taking necessary steps to equip future generations with the skills for future careers and current workforces to transition to the future industries.

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