

News

Industry 4.0 Hub



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

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WELCOME TO OUR FIRST ISSUE!

So, what is Industry 4.0? The fourth industrial revolution, also known as Industry 4.0, is affecting almost every industry globally and rapidly transforming how businesses operate.

Industry 4.0 utilises transformative technologies to connect the physical and digital. Current trends include:

- advanced automation and robotics (including collaborative robots or 'cobots')
- machine-to-machine and human-to-machine communication
- artificial intelligence (AI) and machine learning
- sensor technology and data analytics

We hope you enjoy keeping up to date with the latest news from UOW Industry 4.0 Hub.

LATEST NEWS

Launch of the hub

The launch of the Industry 4.0 Hub at the University of Wollongong's Shoalhaven campus took place on 24 September 2020. The Hub will enable students, industry, entrepreneurs and the general public from the Shoalhaven and other regions to benefit from cutting-edge technology and research.

Minister for Education (at the time of the launch), the Hon. Dan Tehan MP said the Morrison Government had shown its commitment to enhancing collaboration between universities, industry, businesses, Government and the wider community through provision of \$2 million in funding.

University of Wollongong Vice-Chancellor Professor Paul Wellings said the Hub will provide community access to resources and support to create a thriving economic future.

“UOW is determined to continue to value-add to our communities economically, environmentally, socially and culturally by investing in research and innovation. It is fitting to be partnering with the Australian Government to officially open this Industry 4.0 Hub at a time when Australia’s economic recovery is based on our success at growing new businesses, creating jobs, and supporting existing businesses.”





Paul Di Pietro

Paul Di Pietro leads the UOW Industry 4.0 Hub and Facility for Intelligent Fabrication as well as industry engagement activities within the Faculty of Engineering and Information Sciences. Paul completed his undergraduate degree in mechanical engineering at UOW before completing his PhD at UNSW in the area of laser processing. Since then Paul has held a number of leading positions in industry and government. The work of the Hub is to create impact for society and will be industry focused ensuring what we do can be translated for real world application.



Tania Goodman

Tania Goodman is the Business Development Manager and local point-of-contact for UOW's Industry 4.0 Hub. Having lived and worked in the Shoalhaven for over 20 years, her extensive networks have been developed throughout her time in the Finance, Disability and Employment sectors as well as a Career Practitioner in the Tertiary sector and the Federal Government's Department of Education, Skills and Employment. Utilising her connections to link UOW, industry, schools and the community via the delivery of signature programs and initiatives; Tania's excited at the opportunity to work collaboratively in positioning the Hub as strategic to defence industry, advanced manufacturing, agribusiness, schools and the wider community.



Evan Brown

Evan Brown is a University of Wollongong Alumnus, having completed a Bachelor degree in Mechatronic Engineering. Evan has experience in the automotive industry with previous roles in product development, analysis and testing both in Australia and Europe. He has also operated as a consultant engineer primarily in the area of computational analysis. Since joining UOW Facility for Intelligent Fabrication in 2018 Evan has been involved with numerous research projects around robotic automation of product handling and manufacturing processes. Evan is excited about the development of the Industry 4.0 Hub and is keen to make a positive contribution to the region's industry and wider community.



Daniel Gailer

Daniel Gailer has worked for the Facility for Intelligent Fabrication for the last 3 years. Before that he worked with various other groups at UOW to implement automation and industrial robotic solutions to help overcome the challenges of commercialising new products. Prior to this he completed a Bachelor of Mechanical Engineering at UOW. Daniel looks forward to demonstrating what is possible using the latest technology and assisting SMEs in the Shoalhaven to implement new technology in interesting and useful ways.



Emily Yap

Emily Yap joined the Industry 4.0 Hub and the Facility for Intelligent Fabrication as a Research Engineer in the Shoalhaven-Illawarra region in November 2020. Completing a Bachelor degree and PhD in Materials Science and Engineering at the University of New South Wales, Emily brings to the team experience in research and technology development in applied sciences and real-time monitoring systems from her time at CSIRO Mineral Resources.

"Joining the University of Wollongong and the Industry 4.0 Hub has opened my eyes to the amazing community in the Illawarra-Shoalhaven region. Within these few months, we had the opportunity to partake in an interschool competition and visit businesses in Wollongong and Nowra. Connecting with representatives from local businesses and organisations has imparted to me their dedication to developing skilled young Australians, and making an impact locally and nationally. I am excited to collaborate with them in their adoption of Industry 4.0 technologies".



Khoi Nguyen

Khoi Nguyen was excited to return to UOW in November 2020, having completed a Bachelor of Mechatronics/Science and following UOW's journey of robotic engineering from afar as an alumnus. Khoi brings to UOW his skill set of cobot manufacturing within manufacturing lines in multinational industries. Working closely with Paul Di Pietro and Phil Commins as a research engineer, Khoi hopes to bring his experience into the recently awarded \$4 million CRC-P Downer led project and the Industry 4.0 Hub.

"Having been at the University for a couple of months now, I must say I couldn't be happier with the staff and culture. As soon as I started I was welcomed as an immediate part of the team and the UOW family. Having settled into the projects, it is an amazing feeling to reach milestones and see the advancement of automation. I know 2021 is going to be an interesting year and am excited to see the challenges ahead".

OUTREACH

Engaging with school students through STEM activities

One of the first contributions of Industry 4.0 Hub was to the 2020 Sikorsky Australia's Plane Simple Challenge, which took place in December 2020 with students from Nowra Christian School, Shoalhaven High, St John's Catholic High School, Bomaderry High and Vincentia High entering the competition.

Evan Brown, Emily Yap, Daniel Gailer and Khoi Nguyen were present to talk to students about their designs and judge who could fly the furthest distance and stay in the air the longest.

In addition to students being introduced to design and engineering principles, the experience enabled teamwork, creativity and problem solving while being an enjoyable way for students to learn about engineering, aviation and potential future career paths.

This event created awareness amongst schools and defence industry about the Industry 4.0 Hub, future opportunities for school visits and potential collaboration with industry and community.



EQUIPMENT

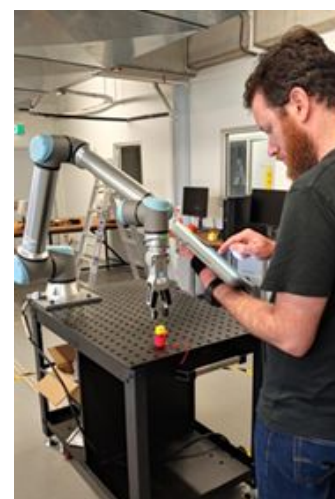
Commissioning Equipment

Shortly before the Christmas break, the Hub received delivery of its first Collaborative Robot (Cobot).

Installation and preliminary commissioning work was carried out by the team to get it online and check its basic functionality. The Cobot is an UR10e from Universal Robots with a 10 kg payload capacity, 1300 mm reach and is capable of safely interacting with humans by limiting forces in collision situations.

Together with our assortment of tools and sensors it will be able to undertake pick and place operations, machine tending and palletising tasks. We are excited to have this addition to the Hub and eager to show off the capabilities of this impressive technology.

Another UR10e Cobot is on its way shortly. It will be configured to demonstrate advanced welding processes and application areas.



UPCOMING EVENTS

Nowra Relay Your Way (Relay For Life) UOW Shoalhaven Campus Team

Date: 16 March 2021
Time: 9am
Location: UOW Shoalhaven campus

Shoalhaven Business Chamber Business After Hours

Date: 24 March 2021
Time: 5.30pm – 7.30pm
Location: UOW Shoalhaven Campus
Register: <https://www.shoalhavenbusinesschamber.com.au/events/business-after-hours-industry-4-0-hub/>