



# DIGITAL LIVING LAB



## THE UNIVERSITY OF WOLLONGONG IS LEADING THE DIGITAL REVOLUTION IN THE ILLAWARRA WITH THE CREATION OF THE DIGITAL LIVING LAB

A SMART CITY SOLUTION IMPROVING THE QUALITY OF LIFE FOR PEOPLE IN OUR COMMUNITY

### SHARE

Recognising the need for a dedicated and interactive research space for smart sensing and Internet of Things (IoT) technologies, the **SMART IoT Hub** was established. This hacking space is open to the whole community including entrepreneurs, researchers, students, starts ups and small business.

The Hub is building a community of technology enthusiasts and developers who are creating an open collaboration network for ideas and new technologies. Our Hub motto is:

'Build it! Hack it! Share it!'

### ENABLE

The University of Wollongong (UOW) has deployed a radio communication network across the region using **LoRaWAN technology**. Partnering with The Things Network, a global and community based initiative, the Digital Living Lab provides an open and free-to-air platform for the Illawarra community.

This open network enables individuals, community groups, business, IT developers, researchers and students to develop solutions that can improve the efficiency of services and liveability of the region.

### CREATE

The Digital Living Lab provides a test bed for new IoT technologies, such as sensors to monitor the environment or assets in real time, and will give rise to smart solutions for challenges facing our community.

The **SMART Infrastructure Facility**, in collaboration with regional partners, facilitates **high impact community projects** that address health, safety and environmental issues across the region. We work with start-ups, local councils, aged care providers, school and community groups to develop and deliver projects that will enhance our community, provide people centric solutions and make us a smart region.

### COLLABORATORS



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# PROJECT SHOWCASE

## PROJECTS




**INDEPENDENT AGEING**

Smart sensors and mobile technologies can improve the quality of life for seniors and enable them to grow old in their own homes. In a non-intrusive way smart sensors can monitor potential risks, assess mobility levels and determine if the senior is eating regularly. SMART is working with aged care providers to implement a pilot study of the system to demonstrate its effectiveness under supervised conditions.




**STORMWATER**

Real time remote monitoring of the stormwater collection network will be trialled across Wollongong City Council. The trial aims to improve emergency response times, minimise damage to assets and make Wollongong a more flood aware and prepared city. Smart water level sensors and water flow sensors will be deployed across the city and delivered by an easy-to-use computer service application.


**ACCESSIBILITY**

Briometrix and SMART will create a crowdsourced real time mapping system using IoT and advanced data analytics aimed at giving wheelchair users more freedom of activity and better health outcomes. This app will be informed by the wheelchair community via the cloud-based CogniCity solution, developed by SMART. This mobile application is used to track journeys, log essential urban features, provide micro surveys and display interactive maps.




**LANDSLIDE**

Partnering with the Roads and Maritime Service, Wollongong City Council and Sydney Trains, UOW will use the LoRaWAN network to monitor potential landslide locations in close to real time. Networked sensors connect sites to data bases and record rainfall, pore water pressures and landslide movement. Live smart messages can be sent from sites when specific thresholds are reached with the potential to save lives through this real time information.



**BINARY BEER**

Binary Beer's smart kegs, linked to a mobile reporting app, take the guesswork out of beer supply chain management and can monitor how much beer is left, the temperature and how the beer is being stored at any point of the supply chain. Each smart keg is fitted with a durable sensor that includes an innovative audio transducer, utilising the LoRaWAN network as part of IoT.

**SHARKMATE**

SharkMate was first developed by a 14 year old student as a way of avoiding the use of nets and shark culls with the hope to save sharks. Teaming with SMART added an aerial imaging system and further developed the app to predict shark sightings. This real-time information should provide the best possible information to water users to determine the likelihood of a shark sighting.

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