Sensing Wellbeing - Sensor Devices

THE HUMAN FITBIT

Wearable technology has changed the way we monitor our daily health and wellbeing, enabling real-time fitness tracking, step counting and even global location.

THE SHEEP FITBIT

A driving motivation for Sensing Well-being was to develop methods for early detection of animal welfare issues such as misadventure, injury or illness in extensive production systems. Off-the-shelf sensors that detect movement and location have proved useful tools.

The long-term aim of the project was to enable growers to utilise the data generated from the sensors to pre-empt negative welfare outcomes through earlier, more targeted intervention. Sensor information also presents an opportunity to optimise production outcomes, which will be crucial for the successful adoption of this technology by farmers.

Overall, the work indicated that individual autonomous monitoring of sheep was possible and of value, although the technology is currently not available at a commercial scale.
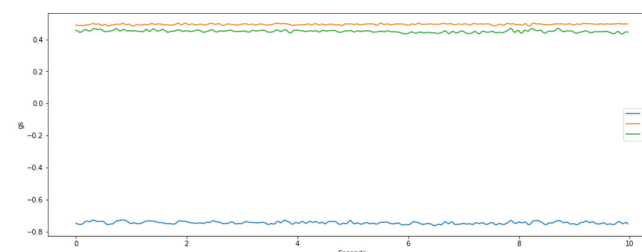
WHAT WE ARE LOOKING AT
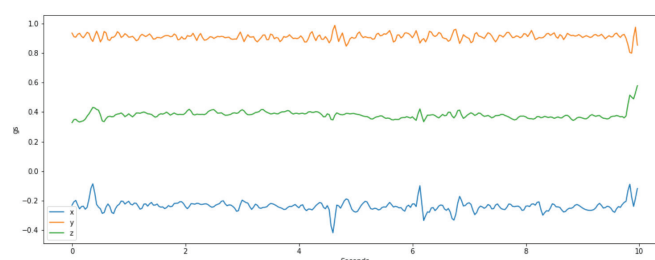
a.   *Sheep 1 Standing (10 second trace)*
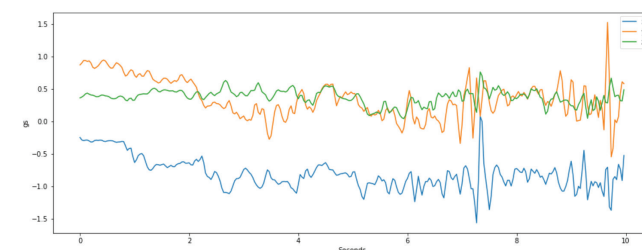
b.   *Sheep 1 Grazing (10 second trace)*

c.   *Sheep 1 Sitting on left side (10 second trace)*

TOOLS USED

- *Actigraph wGT3X-BT - 3-Axis Logging Accelerometer with Bluetooth capability - Movement*
- *Axtivity – AX3 Puck 3-Axis Logging Accelerometer - Movement - Proximity*
- *Mobile Action i-gotU GT-600 USB GPS Travel loggers - Location*
- *GlobalSat LT-100 Series LoRaWAN compliant GPS tracker - Real-time tracking - Location*
- *Kerlink LoRa 923 MHz long range IoT Station - Real-time tracking*

WHAT WE ARE LOOKING FOR?

Positive animal welfare indicators (such as grazing and walking), as well as negative animal welfare indicators (such as non-movement, indicating a cast animal or death, or those related to lambing issues) were able to be identified. Further research is required to achieve real-time monitoring and decision-making tool development.

Ministry for Primary Industries
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