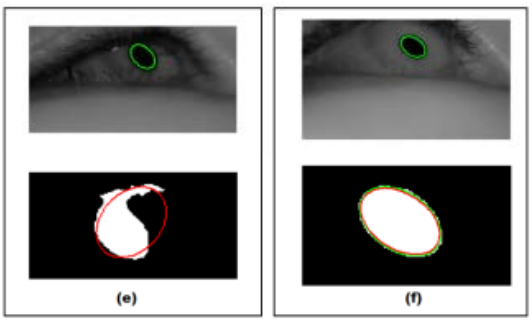
School of Electrical Engineering and Telecommunications

Wearable Automatic Task Analysis

SPECIALISTS IN AUTOMATIC TASK ANALYSIS

The Speech and Behavioural Signal Processing Laboratory is known internationally for its research into task load estimation from wearable signals. Historically, task analysis has been a manual, subjective process.



THE TOOLS OF OUR TRADE

Our laboratory is equipped with:

- A large team of senior and early-career academic staff, postdocs, PhD students and many honours students
- High performance computing capabilities and a large library of custom code and scripts
- More than 15 different custom task datasets of speech, eye activity and movement from wearable sensors – many unique worldwide
- A new soundproofed, light-controlled studio facility for recording of speech and behavioural signals under a range of different protocols (end 2017)

OUR EXPERTS

A/Prof Julien Epps
Dr Siyuan Chen

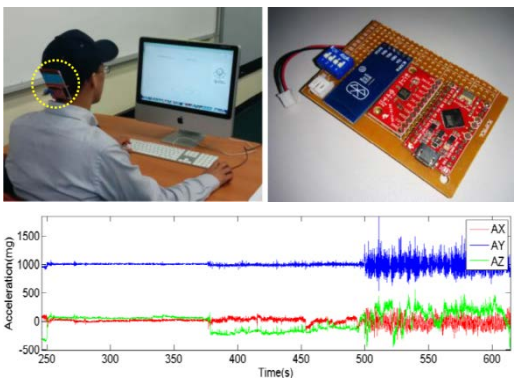
WHAT WE DO

Lead Australian research into:

- Automatic detection of task switching
- Automatic assessment of task load intensity: cognitive, perceptual, physical, communication loads
- Automatic inference of mental state, e.g. cognitive and emotional states
- Processing and analysis of speech, eye activity and movement
- Signal processing
- Machine learning
- Affective computing

Translation of research to

- Non-invasive wearable systems for automatic task analysis
- Detection of fatigue and performance optimisation
- Monitoring mental state via smartphone



OUR PARTNERS

DATA 61 CSIRO

KEYSTONE / RECENT PROJECTS

Human Behavior Modeling and Analysis based on Processing of Wearable Sensor Signals (Data61, CSIRO, '17-'19)
Automatic Task Analysis for Wearable Computing (National ICT Australia, '12-'14)
"Automatic detection of task transition", Australian Patent App. Number PCT/AU2014/000292, filed March 2014

新南威尔士大学火炬创新园区
Torch Innovation Precinct at UNSW

More information contact: A/Prof. Julien Epps, (j.epps@unsw.edu.au), T: +61 2 9385 6579