Residential Aged Care

Associate Professor Shyh Wei Teng (Theme Leader)
Dr Venki Balasubramanian (Deputy Theme Leader)
Who we are

We are one of Australia’s leading research groups in **information and communication technology** (ICT), investigating underlying theoretical problems, developing cutting-edge techniques and technologies, providing high-quality research training, engaging with the industries and government agencies on translational research, partnering with overseas research centres, contributing to the national science & innovation agenda, and ultimately, contributing to developing a better Australia.
How we are organised

A critical mass of ICT researchers from two nationally acclaimed research centres:

**MCCAIR**
Centre for Multimedia Computing, Communications, and Artificial Intelligence Research

**ERA 2015 Rating**
★★★★ (0801 – Artificial Intelligence & Image Processing)

**CIAO**
Centre for Informatics and Applied Optimisation

**ERA 2015 Rating**
★★★★ (0101 – Pure Mathematics)
★★★★ (0102 – Applied Mathematics)
★★★★★ (0801 – Artificial Intelligence & Image Processing)
Key skills

**Multimedia Signal Processing (MSP)**
- Video/image/audio analytics
- Intelligent video surveillance
- Data security & privacy

**Artificial Intelligence (AI)**
- Deep learning
- Big Data
- Outlier detection
- Reinforcement learning
- Decision support systems
- Cyber security
- Information forensics
- Bioinformatics

**Distributed Computing (DC)**
- Internet of Things
- Remote monitoring
- Wearable computing
- Cloud computing
Ongoing research themes

• Data management of aged care residents, aged care workers & health practitioners
• Management of OH&S of aged care workers & health practitioners
• Monitoring & prediction of resident needs & trajectories
• Tailored age & ability-specific activities to promote physical activities & improved health
## Alignment of our skillset with Residential Aged Care Research

<table>
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<tr>
<th>Research Theme</th>
<th>Key Skillset</th>
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<tr>
<td>Data management of aged care residents, aged care workers &amp; health practitioners</td>
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With domain expertise provided by our Nursing researchers (patient safety, clinical simulation, public health, & mental health) and industry collaborators.
Our Researchers

We are a group of 11 academics (& 15+ PhD students), representing cross-disciplinary areas of IT (multimedia signal processing, machine learning, & distributed computing) & Nursing (patient safety, clinical simulation, public health, & mental health)

Information Technology
Prof Guojun Lu • Prof Manzur Murshed • Prof Kai Ming Ting • Dr Adrian Shatte • Dr Jiangang Ma

Nursing
Prof Helen Bartlett • Prof Wendy Cross • Prof Simon Cooper • Dr Louisa Lam
Key Industry Partnerships

- Wimmera Health Care Group
- Latrobe Regional Hospital
- St John of God Health Care
- Royal Brisbane and Women's Hospital
- Australian Unity
- Austin Health
- ANMF Australian Nursing & Midwifery Federation Victorian Branch

*(list not exhaustive)*
Significant Relevant Projects

1. Aged support and aged care: program and policy structures to support ageing well in rural and regional Australia (NHMRC)
2. Real-time and Self-Adaptive Stream Data Analyser for Intensive Care Management (ARC LP100200682)
3. Automatic Depression Detection System based on Patient’s Speech (Latrobe Regional Hospital)
4. First2ActWeb: an interactive video medical emergency simulation software (Nurses Board of Victoria, Equity Trustees: Walter Cottam Endowment Fund, Vic State funding)
5. Leveraging digital technology to reduce the prevalence and severity of eating disorders in Australia (Medical Research Future Fund’s Million Minds Grant)

Research grant funding (2013 – 2018)
Category 1: $2.5m
Categories 2–4: $5.6m
Contact us

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