

ENHANCED HUMAN PERFORMANCE THROUGH OPTIMISATION OF INTERACTIONS BETWEEN HUMANS, SYSTEMS, AND DATA



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

The i3 Lab was established to address industry-relevant problems. The team works to increase engagement with Defence industry in the Hunter and nationally. I3 Lab has partnered with the Defence Science and Technology (DST), attending as invited observers for Operation Virtual Pitch Black, and collaborating on submissions to the Office of Naval Research for evaluation of a DST virtual narrative delivery system. Since 2013, the I3 Lab has worked closely with the Australian Defence College (ADC) Simulation Centre to engage undergraduate and postgraduate students on applied research projects.

COMPETITIVE ADVANTAGE

- Team with extensive industry experience
- Established collaborations with Defence and defence Industry
- All team members are Australian citizens (2 with current NVL1)
- Strong collaborations with biomedical sciences and cognitive psychology
- Embedded research participation in Computer Science, Software Engineering and IT to enable large-scale evaluation studies

SUCCESSFUL APPLICATIONS OF RESEARCH

- Design of new measures for objective evaluation of cyber sickness in virtual environments
- Design guidelines for avatar-augmented role-play systems based on gender
- Evaluation of efficacy of an avatar storytelling system to improve delivery of briefings
- Applied real-time objective cognitive load measures to simulation environments

PARTNERS

- Bohemia Interactive Simulations
- Cubic Defence Australia
- Plexsys
- ADC
- University of NSW Australian Defence Force Academy,
- Australian Defence Simulation Training Centre
- DST, Decision Support Systems, Joint Warfare and Operations and Air Operations Simulation Centre

IMPACT

- Industry engaged PhDs
- Industry engaged Honours, final year project and work integrated learning students
- Contribution to Defence Synthetic Environment Working Group
- Memorandum of Understanding with Cubic Defence Australia, ADC, Bohemia Interactive
- Simulations for research collaboration
- Co-Chair, Simulation Australasia Defence Committee

CAPABILITIES AND FACILITIES

- Skills and experience in undertaking a wide range of evaluations to support Enhanced Human Performance
- Established cross-disciplinary collaborations

MORE INFORMATION

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