

# Agenda for the “AI in Defence” Day at Australasian Joint Conference on Artificial Intelligence 2019 (AI 2019)

(Final)

**Date:** Wednesday 4<sup>th</sup> of December 2019    **Venue:** The Ballroom, InterContinental Adelaide

**Chair:** Dr Ping Hui, Defence Science and Technology (DST), Department of Defence, Australia

**09:00 am – 10:00 am**    Conference Keynote - *AI, past, present, future* by **Dr Dale Lambert**, Chief of Cyber & Electronic Warfare Division (CEWD), DST, Department of Defence, Australia

**10:00 am – 10:30 am**    Morning Tea Break

**10:30 am – 10:40 am**    Introduction to the Defence session – **Dr Matthew Richmond**, Research Leader, Contested Communications Branch, DST, Department of Defence, Australia

**10:40 am – 11:10 am**    Invited Talk - *AI/ML to support the Air Warfare Centre mission* by **AIRCDRE Phil Gordon**, Commander Air Warfare Centre, Royal Australian Air Force (RAAF)

**11:10 am – 11:15 am**    Break

**11:15 am – 12:30 pm**    Conference paper presentations

**11:15 am – 11:40 am**    *The Application of AlphaZero to Wargaming* – **Glenn Moy** and **Slava Shekh** from DST, Department of Defence, Australia

**11:40 am – 12:05 noon**    *Defeating Kinematically Superior Threats with Lower Performance Interceptor Team applying Reachability Driven Regret-matching* – **Arvind Rajagopalan** and **Jijoong Kim** from DST and **Duong Nguyen** from The University of Adelaide

**12:05 noon – 12:30 pm**    *An Empirical Study of Reward Structures for Actor-Critic Reinforcement Learning in Air Combat Manoeuvring Simulation* – **Budi Kurniawan** and **Peter Vamplew** from Federation University and **Michael Papsimeon** from DST, Department of Defence, Australia

**12:30 pm – 1:30 pm**    Lunch

**1:30 pm – 2:30 pm**    Conference Keynote - *Instance Spaces for Objective Assessment of Algorithms and Benchmark Test Suites* by **Prof. Kate Smith-Miles**, University of Melbourne

**2:30 pm – 2:40 pm**    Break

**2:40 pm – 3:10 pm**    Invited Talk - *Army Robotic and Autonomous Systems* by **Lt Col Robin Smith**, Future Land Warfare Branch, Australian Army

- 3:10 pm – 3:25 pm** Defence Presentations (Part I)
- Reasoning under uncertainty with soft (natural language) and hard data* by **Dr Van Nguyen**, DST, Department of Defence, Australia
- 3:25 pm – 4:00 pm** Afternoon Tea
- 4:00 pm – 4:30 pm** Invited Talk - *ML and Planning in application to EW Spectrum Management* by **Dr Don Gossink**, Chief Scientist, Consunet Pty Ltd.
- 4:30 pm – 5:15 pm** Defence Presentations (Part II)
- 4:30 pm – 4:45 pm *Survivable Communications and Autonomous Delivery Service (SCADS)* by **Tom Stevens**, DST, Department of Defence, Australia
- 4:45 pm – 5:00 pm *Team VULCAN – Accelerating AI Implementation in CASG's Air Domain* by **FLGOFF Timothy Price**, Capability Acquisition and Sustainment Group (CASG), Department of Defence, Australia
- 5:00 pm – 5:15 pm *Over-the-air Trainable Cognitive Modems* by **Dr Ismail Shakeel**, DST, Department of Defence, Australia
- 5:15 pm – 5:20 pm** Closing Remarks - **Dr Matthew Richmond**, Research Leader, Contested Communications Branch, DST, Department of Defence, Australia
- 7.00 pm – late** Conference Banquet\*

\* Note that attendance to the conference banquet requires a valid ticket.