DATA TO DECISIONS CRC

From the CEO

This year has started with a rush of activity. The Integrated Policing project, which was approved by the Board in late 2015, held its kick-off early in the year. The team is focussed on working with agency partners to define the specific use case and proof of concept that will initially be delivered. The Beat the News and Apostle projects have built up a "head of steam" with the headquarters Dev/Ops team developing the product roadmaps and architectures, university research teams being formed, agency working group meetings held to shape the deliverables and demonstrations of initial capabilities being conducted. The projects are all focusing on a "mega week" in the middle of the year where demonstrations of the initial capabilities will be provided to CRC participants in Canberra.

In addition to the momentum being built in the projects, the CRC has also been focussed on the 2nd major intake of PhD students. This is well

underway with the number of PhD students sponsored by the D2D CRC reaching 25.

Finally, this quarter also saw the completion of the Big Data Reference Architecture project. This project successfully delivered a reference architecture to Defence, which was received very positively. It has also resulted in a paper being accepted into BIGDSE'16 (Big Data Software Engineering) and a book being planned with a reputable publisher.

Sanjay.

D2D CRC appoints additional Board members

The Data to Decisions CRC announced the appointment of Mr Stephen Merchant and Professor Hugh Durrant-Whyte to its Board of Directors at the Annual General Meeting (AGM), held on Thursday 19th November 2015 in Adelaide.

Steve currently conducts his own consultancy business, having completed almost 40 years of service with the Australian Government. During the latter part of his career, he held a variety of senior appointments in the Australian Intelligence Community and acted as Secretary of the Department of Defence on numerous occasions.

Hugh is a successful academic, engineer and entrepreneur with a proven track for successfully engaging and achieving research outcomes with industry. From December 2010 to December 2014, he was the CEO of National ICT Australia (NICTA) and while working as an academic, Hugh pioneered the field of statistical data fusion, in particular its application in autonomous robotics and in large-scale intelligent systems.

Collectively, their appointment to the Board brings a wealth of experience in Information and Communications Technologies (ICT), national security, Research and Development (R&D), Intellectual Property (IP), commercialisation and technology transfer.

CEO Sanjay Mazumdar said, "Both Steve and Hugh will add significant expertise and strategic insight to the Board and I look forward to working with them closely over the coming years."

Ms Suzanne Campbell also confirmed her retirement from the D2D CRC Board at the AGM. Chairman Tim Scully said, "The Board farewells Suzanne Campbell, one of its founding members. Suzanne's skills and experience, particularly her intimate knowledge of Australia's IT industry, helped the D2D CRC through the exciting but challenging time of setting up the CRC as a corporate entity. Her significant contribution enabled us to 'hit the ground running' and start operations quickly."

The CRC welcomes new participants

Australian National University (ANU) has joined the D2D CRC as an Other Participant.

The ANU team led by Associate Professor Lexing Xie will be contributing key capabilities to the Apostle project, particularly around learning and applying multimedia knowledge graphs.

FOR MORE INFORMATION ABOUT ANU ➔

Board and UTS

The D2D CRC Board held its most recent Board meeting at the University of Technology Sydney (UTS). Apart from regular governance matters, the Board took the opportunity to meet with several senior staff members at UTS and to hear about a D2D CRC project under the Apostle program

being led by Associate Professor Yi Yang. The Board also had the opportunity to visit the UTS Data Arena, a 360-degree interactive data visualisation facility.

AIIA Navigating Privacy and Security Summit 2016

The 2016 AIIA Navigating Privacy and Security Summit was held on 8th March, with the aim to "bring together political, business and technology leaders to discuss the complex issues of privacy and security in today's 'always on', digital world."

The D2D CRC were bronze sponsors for this Summit, with Professor Louis de Koker, Program Lead: Law and Policy, D2D CRC, chairing the panel discussion on Privacy, security and identity in an 'always on' world.

The 2016 Summit examined the implications of privacy and security in a ubiquitously connected, data driven world. Key areas of focus included; digital identity, open data and data sharing, the implications of technologies such as cloud computing, data analytics and the Internet of Things and perceived tensions between privacy and security and innovation.

Panelists on the Privacy, security and identity in an 'always on' world panel included:

- Rachel Dixon, Head of Identity, Digital Transformation Office
- Andrew Rice, Assistant Secretary, Cyber and Identity Security Policy, Attorney General's Department
- Richard Brown, Managing Director, Cogito Group,
- Tom Daemen, Director of Corporate, External and Legal Affairs (CELA), Microsoft Australia and New Zealand, and
- Richard Archdeacon, EMEA CTO, Enterprise Security Services, Hewlett- Packard Company.

The lively discussion explored a range of topics, including developing privacy and security 'by design' approaches; new identity proofing methods, including pattern of life methodologies and the challenges of matching privacy and security approaches to disruptive new business and service models.

The Business of Innovation 2016

Each year the Cooperative Research Centres Association (CRCA) holds its annual conference in a different city across the country. The conference is an ideal opportunity for researchers, educators and industry people to network with CRCA members while gaining valuable insights regarding the nature of cooperative research ventures.

This year the CRCA conference, called Business of Innovation 2016, was held in Brisbane to coincide with the World Science Forum, the first time it has been held outside of New York. The conference provided an opportunity to explore the importance of business and industry working with science to create innovation, and how to foster these relationships. Keynote speakers included Australia's Chief Scientist, Dr Alan Finkel, CRC Advisory Committee Chairman Phil Clark and Professor Ian Frazer who delivered the Ralph Slatyer Address on Science and Society.

READ THE FULL ARTICLE ➔

Sheep CRC

The Data to Decisions CRC is working together with the Sheep CRC to develop a data platform to improve the wellbeing of Australia's sheep. While many factors can affect the health of sheep, such as access to nutrition or parasite infection, it can be difficult to manage these risks due to the natural variability between each animal within large flocks, and the difficulty in monitoring the condition of individual animals spread out across large properties. In collaboration with companies specialising in on farm data collection, an automated monitoring platform will be developed to ingest various data sources, apply risk models and produce decision support information for sheep producers. This project will provide a major advance in the ability to use livestock data and information to manage livestock according to their individual wellbeing needs.

Research update

The D2D CRC's research and development activities are progressing well. *Beat The News* is developing capability, the *Apostle* team has zeroed in on some high value use cases for our end users in national security community, particularly the law enforcement agencies, and the *Integrated Policing* team is just kicking off. The Law & Policy team continues to progress their current international comparative study project, and refine proposals for the future direction of the program.

Since the last eNews update, the *Big Data Reference Architecture* project has been completed and the project wrapped up. The *Big Data Reference Architecture* – essentially a playbook to identify the design challenges and tactics that can be used in big data systems to address the challenges – was developed in collaboration with Software Engineering Institute at Carnegie Mellon University. For more information, please contact Ross Buglak.

READ THE FULL ARTICLE ➔

Key researcher profile
Dr Lewis Mitchell, University of Adelaide

Dr Lewis Mitchell is a lecturer in applied mathematics at the University of Adelaide, working with D2D CRC as part of the Beat the News program. His background is in applying mathematical models to predict complex physical and social systems, in particular techniques for

assimilating real data into predictive models. In the past Lewis has worked on ocean wave models and ensemble data assimilation methods for forecasting in chaotic dynamical systems such as weather. Since being introduced to the fields of complex systems and computational social science during a postdoctoral fellowship at the University of Vermont, Lewis has started to work on sentiment analysis for social media, human dynamics, and disease prediction. Some of his current interests involve understanding information flows across social networks, and the interaction between (both mass and social) media on the spread of diseases.

READ THE FULL ARTICLE ➜

PhD profile
Daniel Cater,
UNSW Australia

Daniel Cater is a PhD research student at the University of New South Wales and has worked as a Research Assistant with the Data to Decisions CRC. His research focuses on Australian surveillance and privacy laws in the law enforcement and security spheres. The research is delving into the practical differences data location and nationality make in the powers and protections Australia grants its citizens and non-citizens and it will consider the scope of transborder data and Big Data applications in the networked global environment. The research will then look at these findings in the context of international treaty and legislative changes following recent terror events and state surveillance controversies and consider the strengths and weaknesses of the Australian legal regime. The current working title of the research is "Data Dislocation: Australian policy surrounding transborder data in security and surveillance" and it concentrates on the nexus of location, nationality, technology, Big Data, surveillance and privacy issues in the law.

READ THE FULL ARTICLE ➜

Staff News

Integrated Policing Delivery Director - Matt Heather

Federal Agent Matt Heather has joined the CRC as Delivery Director for Integrated Policing. Matt is joining the CRC as a full-time secondee from the AFP.

In this role, Matt will be working closely with end-users, industry partners, stream leads and CRC HQ staff to deliver the Integrated Policing project. He will be based in Canberra with frequent stints in Adelaide. Drawing upon his existing network of agency contacts, Matt will provide a very useful conduit for end user engagement for all of the R&D programs.

Many of you know Matt already through various workshops and have seen that he provides invaluable input to our projects drawing upon his experience as federal agent.

Education and Training Manager – Megan Prideaux

Megan Prideaux recently joined the D2D CRC as Education and Training Manager. Megan brings with her a broad range of experience in Learning & Development, Organisational Development and HR in general in the not-for-profit, academic, government and commercial sectors.
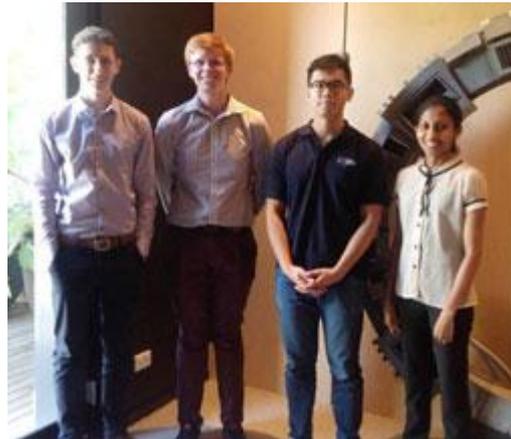
In this role, Megan will be focussing on PhD recruitment, the implementation of our PhD+ and exchange programs, the delivery of the annual conference, further development of our series of short courses and seminars, as well as the continuation of our internship and honours scholarship activities.

Marketing and Communications Officer – Voula Dimitrakopoulos

Voula Dimitrakopoulos recently joined the D2D CRC as its Communication and Marketing Officer. Voula joins us after recently completing her Marketing and Management degree in which she excelled, leading to multiple university commendations and selection in exclusive university marketing activities. Voula will work with the Executive and Management team in the development of comprehensive communication and marketing plans that will increase stakeholder awareness regarding the research, E&T and innovation exchange activities of the D2D CRC. Voula will work three days a week from D2D CRC HQ at Base64.

EDUCATION & TRAINING

Internships

Over the summer we hosted one Masters and five Undergraduate students for 6-12 week vocational internships at D2D HQ. Students worked on self-contained projects in direct support of capability development of the Apostle and
Beat the News programs.

Topics covered include various applications to facilitate image processing, for example:

- Automated collection of training data
- Facilitated labelling of training data
- Facilitated collection of images for building new models
- Testing of public image processing services (IBM, Google)

Machine Learning on unstructured and semi-structured data, covering:

- Geo-location feature extraction though propagation of social follower/friend networks
- Population group classification

and, various modelling of:

- Flu prediction
- Dynamic exploration of trending social subjects

PhD+

The second intake of PhD students is well underway. There are already 25 PhD students being sponsored by the D2D CRC. The CRC has more than 20 PhD topics currently available, aligned to the Apostle, Beat the News and Integrated Policing projects. In addition to the PhD research projects, the D2D provide all PhD students with access to additional benefits under the PhD+ program. Why a D2D CRC PhD+?

- Be a part of leading edge R&D in Big Data
- Get to work on real world problems
- Work in an exceptional research environment

- Introduction to D2D CRC's 20+ participants and a potential pipeline to secure industry employment at the successful completion of your PhD

Additional benefits

- Annual attendance at the D2D CRC Conference including travel and accommodation
- Merit based student 6-8 week exchanges to industry, government agencies and international research institutes
- Free of charge access to D2D CRC Data Science short courses and professional development training to get you job ready
- Access to entrepreneurship, innovation and commercialisation mentoring and training

Scholarships (2016-2018 entry)

- Top-up scholarship value of $15,000 per annum
- Tenable for 3 years, with possible additional six months of funding
- Opportunities to work with world class researchers and leading industry and government partners
- International exchange program

CLICK FOR A FULL LIST OF TOPICS CURRENTLY AVAILABLE INCLUDING ELIGIBILITY CRITERIA AND HOW TO APPLY ›

D2D CRC Honours

The D2D CRC are seeking expressions of interest for Honours students and honours project supervisors.

Honours: $5k per annum, available to all students enrolled at the University of South Australia, University of Adelaide, Deakin University, La Trobe University and UNSW Australia.

CLICK TO APPLY ➜

POSITIONS AVAILABLE

Software Engineer ➜

CALENDAR OF EVENTS

**HOLD-THE-DATE: DEMO DAY & MEGA-WEEK
(28 JUNE – 30 JUNE, CANBERRA)**
With all three significant projects in the D2D CRC now under way and concentrating to deliver regular drops of capability and demos to the various working groups, it is well worthwhile opening our doors to showcase the work underway and the progress being made to the wider community. An "Open Demo Day" will be held in Canberra on Wednesday 29 June. Hold-the-date in your calendar – further details will be provided closer to the date. The "Demo Day" will be part of a larger "Mega Week", held in Canberra from 28 June to 30 June, which will see all of the Apostle, Beat the News & Integrated Policing working groups and steering committees meeting concurrently.

IN THE NEWS

Knowledge Nation 100, 11 December 2015, the Australian (CEO and Board Director (Hugh Durrant-Whyte)) listed. ➔

Building a high-tech state, 14 December 2015, The Advertiser

Big Data gives cool insights to air conditioning company, 9 March 2016, The Lead South Australia ➔

Participants

To view our full list of participants **CLICK HERE** ➔

CONTACT

DATA TO DECISIONS CRC

P +61 8 8302 8978

E INFO@D2DCRC.COM.AU

WWW.D2DCRC.COM.AU

Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Programme