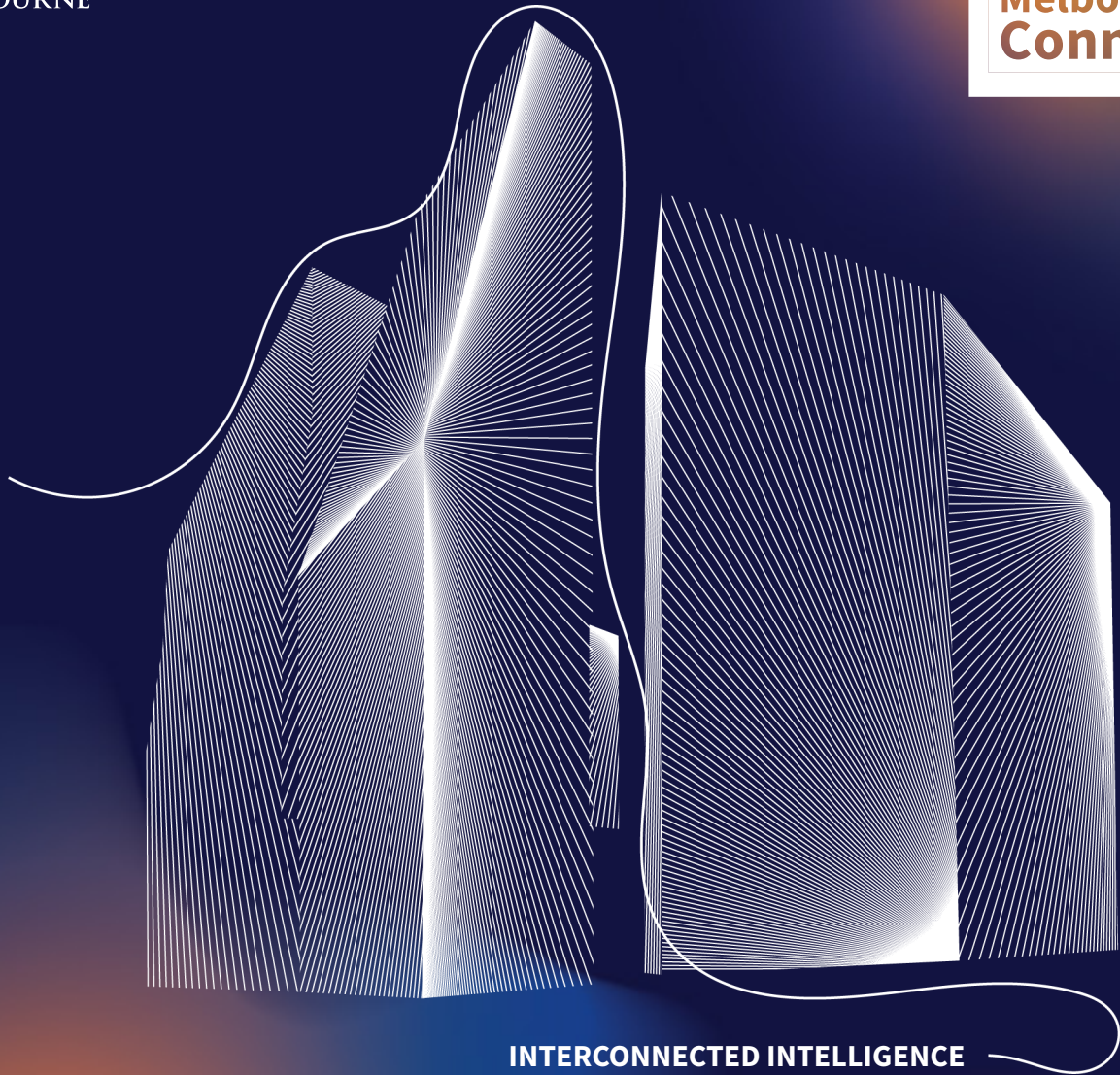THE UNIVERSITY OF
MELBOURNE

24 Oct.
2023
Melbourne
Connect

INTERCONNECTED INTELLIGENCE

PROGRAM
THE 9TH CIS
DOCTORAL COLLOQUIUM

#CISDC2023

Welcome / Wominjeka

Welcome

Welcome to the 9th Annual CIS Doctoral Colloquium!

The Doctoral Colloquium is a student-driven event for graduate researchers across the University of Melbourne's School of Computing and Information Systems. We are excited to have you join us for this gathering of brilliant minds in the fields of computer science. This event is dedicated to fostering innovation, collaboration, and the exchange of ideas.
Throughout the program, you'll have the chance to attend exciting sessions and network with esteemed professionals in the field. Now in its ninth year, we have strived to make the DC even more industry oriented by introducing a special industry talk session as well as a career-focussed panel.

We encourage you to be curious, share your knowledge, and make the most of this invaluable experience.

Colloquium Theme

This year's theme is "Interconnected Intelligence". This theme resonates with the different fields of research and expertise at Melbourne Connect. CIS-DC 2023 celebrates the interconnectedness across disciplines such as artificial intelligence, human-computer interaction, information systems and computer science.

Venue Map

The 9th CIS Doctoral Colloquium (CIS-DC 2023) will be held at Melbourne's newest innovation precinct: Melbourne Connect, on Tuesday 24th of October 2023. The buildings accommodate more than 500 academic staff and post graduate students, researchers, businesses, and start-ups collaborating all together.

Melbourne Connect

700 Swanston St
Carlton VIC 3053
(03) 9035 5553

General Information

Registration Desk

Our registration desk will be located outside of the Forum Space on the Mezzanine (lifts level M) at Melbourne Connect, 700 Swanston Street, Carlton (entrance near the corner of Swanston and Grattan Streets).

The desk will be open from 8:30 - 18:00.

Catering

The event is fully catered, including lunch, morning and afternoon tea. We have done our best to cater for any advised dietary requirements. For break times, please refer to the DC schedule.

Emergency Details

In an emergency, call **000**, for an Ambulance, Fire Service or Police. To contact campus security, call 834 46666 or 1800 246 066 (free call) at any time.

Visitor Wi-Fi

Wireless internet is available to visitors attending the Doctoral Colloquium.

Join Network: **MelbConnectGuest**
No password required.

Contents

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Logistics Chair

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Research Project Officer

Noah Scotti
Administration Officer

Schedule

8:30 - 9:00	**Arrival and Registration** Forum Space, Mezzanine (lifts level M)

9:00 - 09:20	**Welcome** Forum 1

9:20 - 10:00	**Keynote Address: Dr Johan Barthelemy, NVIDIA** Accelerating Generative AI Forum 1

10:00 - 10:30	**Session 1A: Papers** **Human-Computer Interaction** Forum 1	**Session 1B: Papers** **Information systems** Forum 3
	1. **Piumi Perera** Digital Encounters with Nature 2. **Matthew Sidji** Exploring the Use of AI-Powered Tools in Cooperative Games: A Study of Human Participants Playing Codenames with a LLM assistant	1. **Davor Petreski** Data Cooperatives in HE: a philosophical exploration of justice 2. **Catherine Thompson** Sunshine is the Best Sanitation: Truth-Telling in the Digital World

10:30 - 11:00	**Morning tea break** Forum 1

11:00 - 12:00	**Session 2A: Papers** **Computer Science** Forum 1	**Session 2B: Papers** **General** Forum 3
	1. **Louis Cheung** Formally Verifiably Suffix Array Construction 2. **Philip Cervenjak** Improving a Parameterized Streaming Algorithm for Maximum Coverage 3. **Meng Yuan** Correspondences Between Topic Models and Text Embeddings for Information Retrieval	1. **Pengbo Yan** Proving Obliviousness of Probabilistic Algorithms with Formal Verification 2. **Aidan Mcloughney** Unintended data driven consequences in machine learning 3. **Pilar Selene Linares Arevalo** Verifying Memory Safety: Integrating Type Theory and Program Logics

12:00 - 13:00	**Poster Session and Lunch break** Launch Pad area

13:00 - 13:30	**Session 3: 3-Minute Research Session** Launch Pad area

1. **Nattapat Boonprakong**
   Bias-Aware Systems: Understanding, Detecting, and Mitigating Cognitive Biases in Online Information Consumption
2. **Chenyang Wang**
   Warping Time without Alignment
3. **Chen Wang**
   Anomaly detection for human behaviour
4. **Xinyu Su**
   Traffic forecasting based on traffic propagation patterns
5. **Yige Song**
   A Comprehensive Profile of Students' Learning Online

13:30 - 14:00	**Invited Talk: Assoc. Prof Peter Cebon, University of Melbourne** From idea to product: helping researchers commercialise their idea Forum 1
14:00 - 15:00	**Keynote Address: Prof. Justin Zobel, University of Melbourne** The Arrival of the Internet Forum 1
15:00 - 15:45	**Master Class: David Baker, Microsoft** Generative AI Forum 1
15:45 - 16:10	**Afternoon tea and Networking** Launch Pad area
16:10 - 17:00	**Session 5: Careers Panel Discussion** Forum 1

- **Assoc. Prof Peter Cebon, The University of Melbourne**
- **Prof Colin McLeod, The University of Melbourne**
- **Dr Sarita Rosenstock, The University of Melbourne**

MC: Dr Shaanan Cohney, The University of Melbourne

17:00 - 17:15	**Award Ceremony** Forum 1
17:15 - 17:45	**Refreshments and Networking** Launch Pad area
17:45	**Close**

Schedule

Poster Session
Launchpad Area

- **Ying Ma**
  Location Information on Social Media Platforms: Perceptions, Behaviours and Implications

- **Meng Yuan**
  Measurement of Clustering Effectiveness for Document Collections

- **Archana Vadakattu**
  Effective Knowledge Transfer with Strategies

- **Nellie Seale**
  There's No Silver Bullet: Dungeons, Dragons, and Digital Dilemmas in Museums

- **Tharindu B. Hewage**
  Green Cores: Software-defined Renewables for Carbon-aware Application Scheduling

- **Abeer Alshehri**
  Explainable Goal Recognition

- **Emma Baillie**
  When to fight online misinformation

- **Xiang Peng**
  Developing IT-Enabled Sustainable Innovations

- **Tom Harris**
  Understanding racial and ethnic disparities in COVID-19 outcomes using an agent-based simulation

- **Yige Song**
  Students' Online Learning Profile – Explorative Data Analysis & PhD Plan

- **Zhuoqun Huang**
  RS-Del: Edit Distance Robustness Certificates for Sequence Classifiers via Randomized Deletion

- **Viktoria Schram**
  A Probabilistic Approach to Learning Curve Prediction incorporating Language Specific Information

- **Ming Chen**
  iPod: Interference-aware Pod Placement for Latency-critical Services in Clouds

- **Jia Xu**
  Managing and Making Sense of Data to Drive Digital Transformation: A Case Study

- **Rui Xing**
  Automatic Explanation Generation For Climate Science Claims

Our Speakers

Johan Barthelemy, PhD
Developer Relations Manager - Strategic Researcher Engagement

NVIDIA

After his PhD in Applied Mathematics at the University of Namur (Belgium), Dr. Johan Barthélemy joined the SMART Infrastructure Facility of the University of Wollongong (Australia) where he was a Lecturer and the head of the Digital Living Lab researching and developing AIoT solutions focusing on the development new applications of AI and embedded IVA for smart cities and environmental monitoring. Being passionate about applied AI and how to accelerate it with GPUs, he is now a Developer Relation Manager at NVIDIA, helping developers and scientists in their journey to build the next generation of AI-based solution, with a particular focus on Conversational AI.

Keynote Address

Accelerating Generative AI

Generative AI has the potential to revolutionize the way we approach a variety of tasks, from image and video synthesis to natural language processing. However, developing and deploying these models can be a complex and time-consuming process. In this talk we will present some of the tools and solutions that researchers can use to accelerate the design, training and inference of such models, as well as some of recent developments in the generative AI space.

Professor Justin Zobel
Professor in the School of Computing and Information Systems and Pro Vice-Chancellor

The University of Melbourne

Professor Justin Zobel is a Redmond Barry Distinguished Professor in the School of Computing and Information Systems and Pro Vice-Chancellor (Graduate and International Research), in which role he oversees the University's graduate research training and international research partnerships. In the research community, Professor Zobel is best known for his role in the development of algorithms for efficient web search and for his contributions to robust research methodologies, and is the author of three highly regarded textbooks on graduate study and research practice.

Keynote Address

The Arrival Of The Internet

The internet underpins modern society: commerce, government, and our ordinary daily activities are completely reliant on it. But how did it emerge? What factors led to its existence? In this talk I give a brief history of some of the underlying ideas, of how the internet changed over time, and of how in 1989, when it was still a niche technology that few had heard of, the University of Melbourne came to connect Australia to the world. Entwined with this story of the technology is also that of the experience of using the internet from its first incarnation to the present day, and of the changes it brought and is continuing to bring. This history shows that in some ways its emergence was unlikely but also shows how quickly – and recently – we became dependent on this universal, ubiquitous entity that connects the planet.

Our Speakers

Associate Professor Peter Cebon

Associate Professor and Program Leader of the Innovation Practice Program

The University of Melbourne

Peter Cebon has almost 30 years experience as a researcher and consultant in the broad areas of innovation management, innovative strategy delivery, organisational design and organisational behaviour. He recently left full-time academic work, and now splits his time between consulting and research.

Most of his current consulting work involves helping large organisations put in place or improve their management systems that help them to deliver risky (i.e. high innovation) strategies.

David Baker

Account CTO / Technology Strategist

Microsoft

David Baker is an Account CTO at Microsoft, where he leads the virtual technology team to driving the adoption and implementation of Microsoft technologies into strategic customers. With over 25 years of experience in the IT industry and across a range of technologies he is focused on consulting and advising on technology strategies, especially on how to transition into cloud operating models and extract value from them.

This career has also involved 5 years working for Apple within their Silicon Valley headquarters providing insight and analysis of technology trends. In Australia he has worked with various FSI customers and service providers, helping them accelerate their businesses and delivering transformations. He is also passionate about developing others, mentoring, and improving operating models.

Professor Colin McLeod

Professor and Executive Director of the Melbourne Entrepreneurial Centre

The University of Melbourne

Colin is the Executive Director of the Melbourne Entrepreneurial Centre and a Professor in the Faculty of Business & Economics at the University of Melbourne. He was awarded the title of Enterprise Professor in 2016 in recognition of his contribution to industry and academia.

The Melbourne Entrepreneurial Centre runs a range of accelerators for university students and alumni as well as research translation accelerator/incubator programs for academic researchers and doctoral students.

Colin has a long-standing interest in entrepreneurship. He co-founded his first business in 1992, which expanded to a national company with almost 200 employees, he was a Visiting Scholar at the Haas School of Business in 1995/96 during the first 'Internet Boom' (and crash!) and completed a PhD in 1998 that identified some of the key factors that lead to the successful commercialisation of innovation.

Dr Sarita Rosenstock

Lecturer in Fairness

The University of Melbourne

Dr Sarita Rosenstock is a lecturer at the School of Computing and Information Systems at the University of Melbourne. Her research is at the intersection of Philosophy, Math, CS, and STS.

Dr Shaanan Cohney

Lecturer in Cyber Security

The University of Melbourne

Dr. Shaanan Cohney is a Lecturer at the University of Melbourne's Centre for AI and Digital Ethics where he researches how computer systems can help – or harm – society. As a cybersecurity researcher, he publishes regularly in top academic venues and has won awards including best paper at CCS, the flagship peer reviewed outlet in his field.

Dr. Cohney regularly appears in the media, with recent appearances including the NYTimes, The Age, and ABC News. Dr. Cohney's former positions include Cybersecurity Fellow for the U.S. Senate and a Fellowship at Princeton University. He holds a PhD in Cryptography, alongside a Masters in Law, and a Masters in Engineering–all from the University of Pennsylvania.

Launch Pad

Registration desk

Restrooms

| Forum 1 | Forum 2 | Forum 3 |
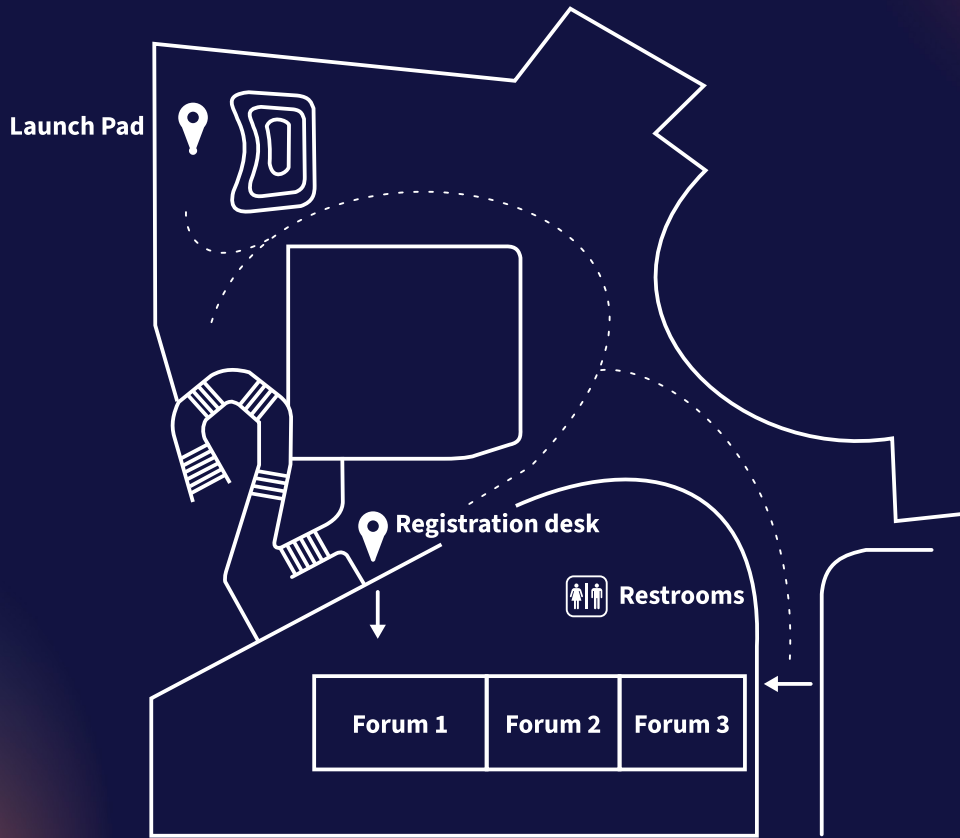
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