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SMU

SINGAPORE MANAGEMENT
UNIVERSITY

**CENTRE FOR
AI AND
DATA GOVERNANCE**

SCHOOL OF LAW

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DEAN'S MESSAGE

It has been more than one year since the establishment of Centre for AI & Data Governance (CAIDG) here at the SMU School of Law. The setting up of this Centre was made possible by a grant of \$4.5 million from the National Research Foundation (NRF) and the Infocomm Media Development Authority (IMDA) to the SMU School of Law in June 2018. We are grateful for the trust that has been placed in us, and we will do our utmost to deliver.

AI continues to shape our lives and raise important regulatory issues that we must address collectively. In my speech at the opening of CAIDG back on 24 September 2018, I had touched on how AI is playing an increasing role in our lives, whether in the form of autonomous machines performing desired tasks in unstructured environments without continuous human oversight, or in the medical field assisting in 85% of certain surgeries in the US. These issues are still very much relevant now, and it is critical that CAIDG continues its work to produce cutting-edge research at the intersection of theory and practice.

In our first year of operations, CAIDG members published 16 working papers and 12 research articles, and organised 28 seminars. Highlights of the year included planning for our SMU-Microsoft Asian Dialogue on AI Governance, dialogue session with Mr Kent Walker, SVP and General Counsel of Google, hosting the German Digital Council (appointed by Angela Merkel to advise the German Government on the importance of digitalisation), our panel discussion with members of the International Women's Forum and our involvement in the inaugural World Legal Summit. In addition, we also organised several academic conferences, such as the ANU-SMU AI Symposium, the Artificial Intelligence & Intellectual Property Conference, and the AI & Commercial Law Conference.

Our second year of operations, 2020, began with us hosting the SMU-Microsoft Asian Dialogue on AI Governance, which was made possible by Microsoft's generous support. Involving over 8 academic partners from over Asia-Pacific, our vision is for this Dialogue to be a leading forum for the resolution of AI regulatory issues in Asia. More recently, the unfortunate development of the Covid-19 pandemic which brought with it unprecedented challenges to society and the economy. It has also raised important issues about AI and data privacy, which CAIDG will endeavour to deal with.

Finally, on 1 April 2020, I handed over the directorship of CAIDG to Professor Mark Findlay. Mark has been with the School of Law for more than ten years as faculty member, and with CAIDG as one of its Deputy Directors from inception. He led the project track on "Transforming the Labour Force", and is currently responsible for the AI Ethics Hub project. I am confident that Mark will lead CAIDG to greater heights, together with Deputy Director Associate Professor Warren Chik. I would also like to record my thanks to Junhao, who has handled the administrative aspects of CAIDG with much distinction since its inception. Angela, who became involved later, has also played important roles in the administration.



Professor GOH Yihan
Dean, School of Law
Founding Director, CAIDG

DIRECTOR'S MESSAGE



Professor Mark FINDLAY
Professorial Research Fellow
Director, CAIDG

Taking over the directorship of a dynamic and vibrant research Centre such as CAIDG is a challenge in normal circumstances. However, with the onset of the COVID-19 pandemic our working environments, our human engagement, our ability to draw on so many resources we had previously taken for granted, and our personal and professional priorities have all required radical rethinking. A measure of the relevance and resilience of CAIDG is how we have been able to swiftly augment the research mission to provide timely and significant advising on regulatory and governance issues generated through the control responses to our global health crisis. Singapore has been a world leader in developing comprehensive control strategies and state-of-the-art surveillance technology. This has required of research centres such as ours with a commitment to AI and big data as important social and commercial stimulants to collaborate with international friends such as the Berkman Klein Centre, the TUM Institute for Ethics in AI, and the Allens Centre for Law and Technology to provide local, regional and international perspectives on AI-assisted pandemic control and the challenges such initiatives present for personal data protection, rights and liberties. Along with these concerns the Centre is actively involved in exploring legitimacy and trust to better ensure acceptance of these developments and community compliance in a critical atmosphere.

The pandemic and its control has raised issues surrounding mass data sharing in smart cities. Singapore again has international prominence in modern urban design and its implications for AI promotion. During restrictions on movement and association, some sections of our urban populations, such as the elderly, have faced difficulties in appreciating and adjusting to these conditions. Surveillance technology designed to keep the elderly safe must operate in an atmosphere where citizens feel a sense of inclusion and are represented in very personal transparency/accountability, governance concerns. The Centre is examining these developments and their ramifications for national strategies.

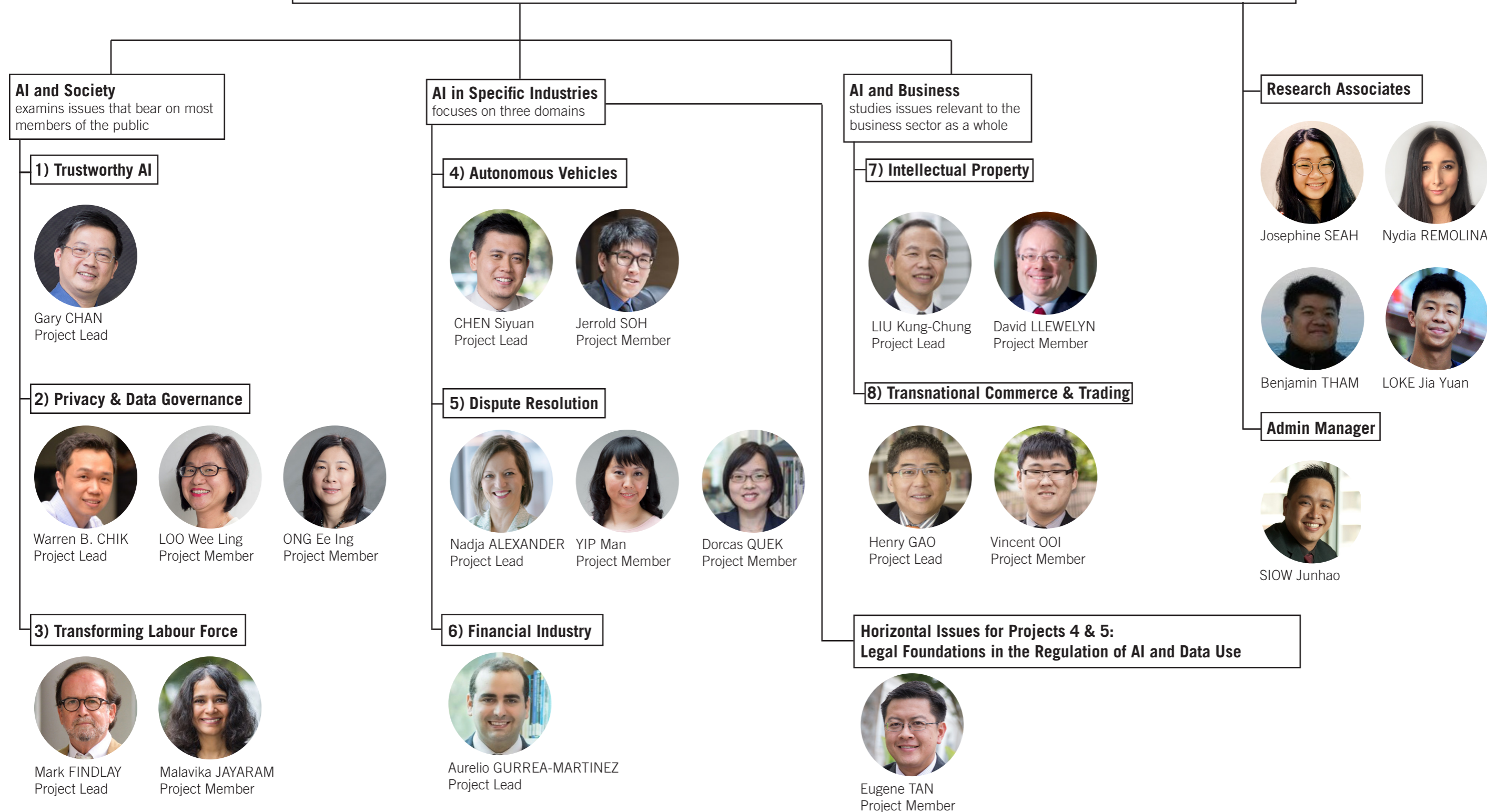
Moving from the real to the virtual worlds has required adaptability in Centre planning and creative thinking so that our essential communications with other researchers and agencies are not degraded through the loss of a personal dimension. A good example is how the Microsoft-sponsored Asian Dialogues has transformed from its first successful round table into planning for an exciting series of webinars coming out of Seoul and Tokyo. Special thanks to Malavika and Nydia, as well as all our participants, for keeping the energy flowing. Many Centre members have been involved in webinars over recent months organised by BIICL in the UK, SG innovate and the law school research office.

Our publication output in these trying times has peaked thanks to the enthusiasm of colleagues such as Gary Chan, Warren Chik and Malavika Jayaram, and the dedication of our RA team Ben, Jia Yuan, Josephine and Nydia. I have demanded much from our researchers and they have responded above and beyond expectations. Ben and Jia Yuan are moving on soon to new challenges and we wish them well and thank them for their involvement. We are shortly to welcome Alicia and Jane to continue our strong research capacity. I am confident with the Centre operating under the watchful and professional administration of Junhao, and with the real team spirit that is driving what we do, that the Centre will emerge into the 'new normal' having learnt and contributed much.

Finally I want to express my gratitude to Yihan for his confidence in passing the directorship over to my custody. Without Yihan's foresight and energy there would be no CAIDG and the successes from its formulation till now are to his credit.

If there is a central idea that governs my hopes for the Centre is that we can act as a safe space in which reflections on the impact of AI and the massive reach of big data can be critically discussed and that we will contribute to AI for social good in all its commercial, industrial, cultural and welfare dimensions.

OUR PEOPLE



OUR FIRST YEAR IN REVIEW

Brief Overview

The goal of CAIDG is to conduct academic research and facilitate dialogue about AI regulation and data governance, with an emphasis on Singapore and the Asia Pacific region. In pursuit of that goal in 2019 (our first full year of operation), we organised more than 30 events involving academics and practitioners, and contributed to several publications. Here are some highlights.

Events

On 11 and 12 April 2019, we organised a research seminar with the College of Law, Australian National University. On day one, researchers shared working papers and publications. On day two, we held a broader discussion with people from industry and government. We covered a broad range of topics, including the important but difficult project of making terms like “transparency”, “trust” and “responsibility” more specific.

KPI Category	KPI Achieved
Research Articles	12
Working Papers	18
Conferences	2
Seminars, Workshops, other Events	33



On 1 November 2019, Nydia Remolina and Assistant Professor Aurelio Gurrea Martinez organised a roundtable about AI in the financial sector, in collaboration with friends from Hong Kong University, the Oxford Internet Institute, and the University of Hamburg. We discussed the impact of AI on banking, capital markets, and insurance, covering applications like credit scoring, robot advisors, high frequency trading, and customer profiling. On the back of the roundtable, Nydia and Aurelio are currently working on a book about similar topics. The Monetary Authority of Singapore has taken proactive steps to regulate AI, and we’re excited to support their efforts.



We rounded up 2019 with the AI and Commercial Law Conference: Reimagining Trust, Governance, and Private Law Rules, on 5 and 6 Dec, co-convended by Professor Gary Chan and Associate Professor Yip Man. The conference was attended by academics from Asia and Europe, along with leading practitioners and members from the legal industry. Mr Yeong Zee Kin, Deputy Commissioner of the Personal Data Protection Commission, gave the keynote address at this event.

Publications

Online dispute resolution can enhance access to justice, but could make courts less transparent, accountable, and fair. In “Ethical Concerns in Court-Connected Online Dispute Resolution”, Assistant Professor Dorcas Quek discussed four aspects of court ODR systems that are likely to raise ethical challenges. For instance, traditional dispute resolution is broken up into phases, which aids confidentiality. Court ODR systems allow for a more seamless experience, which improves accessibility and convenience but could erode confidentiality.

A “contracting problem” arises when software is used to autonomously enter into contracts without human input. Questions arise as to how and whether the users have expressed an intention to be legally bound. In “Contracts Formed by Software: An Approach from the Law of Mistake”, Vincent Ooi suggests that one solution is to extend the object theory of contract, allowing parties to agree in advance to accept any contract entered into by the software they have chosen that is within pre-set parameters.

Other Projects

Our Research Associates Loke Jia Yuan and Josephine Seah started a newsletter about AI policy and the wider ecosystem in Singapore. They’ve written 10 issues so far, summarising “big” updates like the National AI Policy, and other things that they’ve found interesting and surprising.

Conversations about “ethical AI” often lack participation from the programmers and engineers who are actually deploying AI systems in the real-world. Josephine and Professor Mark Findlay have launched the Ethics Hub 4 Asia, a program which aims to encourage AI developers to consider the social impacts of their products. We’ve started by organising focus groups with developers to discuss issues related to fairness.



Conclusion

This is just a snapshot of the Centre’s activities in year 1. More than exceeding our KPIs for that period we have grounded our various research heads, broadened our outreach and accessibility, and refined our relevance in critical areas like ethics and responsibility, data protection, fintech regulation, ADR cross border commerce and trade, and many more. In the year to come we will be increasing our publications and maintaining our events calendar even if formats change to meet these trying times.

EVENT HIGHLIGHTS

World Legal Summit

CAIDG co-organised the World Legal Summit together with the Singapore Academy of Law (SAL), LexisNexis, and LawTech.Asia on 1 August.

The World Legal Summit is an international annual event held over a 24 hour period in multiple countries around the world. The Summit brings together experts in legal and technology industries in conversation about the regulatory and legislative challenges in the sustainable development of technology. Topics for this year were: identity and personal governance,

cyber security and personal data, and autonomous machines.

There were a total of 4 sessions:

Session 1 - Identity & Personal Governance

Session 2 - Cybersecurity & Personal Data

Session 3 - Autonomous Machines

Session 4 - Technology & Access to Justice (unique to Singapore)

Recordings of the event can be found on our website at :

<https://caidg.smu.edu.sg/010819-world-legal-summit>



AI and Commercial Law Conference

On December 5 and 6, we organised the conference “AI and Commercial Law: Reimagining Trust, Governance and Private Law Rules”. The convenors of the event were Professor Gary Chan and Associate Professor Yip Man from the SMU School of Law. The event was attended by academics from Asia and Europe, along with leading practitioners and members from the legal industry.

Our SMU School of Law Dean, Professor Goh Yihan, gave the opening address and handed over to Mr Yeong Zee Kin, Deputy Commissioner of the Personal Data Protection Commission (PDPC) to deliver the keynote speech which covered the progress of PDPC’s Model AI Governance Model framework and related initiatives in Singapore.

Assistant Professor Malavika Jayaram (SMU) then moderated the opening panel discussion about realworld issues in AI and commercial law in Asia, with insights from a legal tech entrepreneur (Ms Alexis Chun, Co-Founder of Legalese), a computer scientist and academic (Assistant Professor Akshat Kumar, SMU School of Information Systems) and a law academic (Professor Urs Gasser, Executive Director of

the Berkman Klein Center for Internet and Society at Harvard University). The panel discussed various technical, legal and policy issues on the potential deployment of AI.

The conference proceedings consisted of five sessions. The first session, chaired by Mr Joey Pang, Vice-President (Legal & Compliance), Technology Operations and IP at DBS, addressed the topic of AI in Asia and the Global Context. During this session, Professor Gasser presented about “AI, Trust, and Law” providing a bird’s eye view of the developments in AI and data governance in Asia and the global context. Subsequently, Associate Professor Simin Gao (Tsinghua University Law School) presented her paper about the Legal Status and Liability Theory of Robot Advisors, focusing especially in China’s regulatory approach to robo-advisors. After the presentations, Ms Sophie Mathur, Partner at Linklaters, commented that the context is crucial in the AI policy discussions and that worldwide convergence is going to be inevitable, particularly in financial services such as robo-advisors. Mr Marcus Bartley Johns, Asia Regional Director, Government Affairs and Public Policy at Microsoft, felt that AI governance will definitely achieve a degree of convergence at a high level, and with respect to the region, the next step is putting into practice the common expectations.

Next, Professor David Llewelyn (SMU) chaired the second session, AI and Data Protection: New Regulatory Approaches. Associate Professor Warren Chik (SMU), provided an overview of Singapore’s regulatory approach to Artificial Intelligence and Data Protection. Professor Ian Walden (Queen Mary University of London) spoke about AI Governance, Data Sovereignty and the benefits of transborder data flows for AI-led development. Associate Professor Alvin See (SMU) presented on behalf of Associate Professor Yip Man her topic on information fiduciaries in the context of personal data. Thereafter, Mr Lanx Goh, Senior Legal Counsel (Privacy & Cybersecurity) & Global Data Protection Officer at Klook Travel Technology Pte Ltd, highlighted the importance of the concept of consent in the context of data protection and the importance of educating the public about concepts such as transparency. Mr KK Lim, Head, Cybersecurity, Privacy and Data Protection at Eversheds Harry Elias commented on the seriousness of the data localisation problem and how it impacts on business.

The first day closed with the third session on AI and Data Protection: Conceptions of Property and Trust, chaired by Ms Wang Yanjun, Group Chief Corporate Officer, General Counsel and Company Secretary at SEA Group. Professor Lee Pey Woan (SMU) presented her research about the concept of property applied to personal data. Next, Professor Chris Reed (Queen Mary University of London) explored the challenges of Data Trusts and their importance for lawful AI. Associate Professor Alvin See presented his paper about the effectiveness of blockchain technology in land administration. This third session concluded with the commentaries of Mr Koh Chia-Ling, Managing Director at Osborne Clark (Queen Street), and Mr Benjamin Wong, Sheridan Fellow (National University of Singapore), who addressed the importance of protecting the interests of individuals and, at the same time, helping society to innovate.

The second day of the Conference opened with session four, Evolution, Innovation and Adaptation in the Age of AI and Data, chaired by Ms Melissa Koh, Managing Director - Legal (ASEAN and China) at Accenture. During this part of the event, Professor Haksoo Ko (Seoul National University) in his paper “How to De-identify Personal Data in Korea: Evolution of Data Utilization Schemes”, provided a comparative analysis of the related initiatives and encouraged lawyers, policymakers and technicians to speak the same language in order to build better policies. Next, Professor Goh Yihan analysed the concept of contractual consent in the age of AI and Data and explained why the traditional perspectives of offer and acceptance in contract law may be challenged by AI. Mr Yeong Zee Kin spoke about the importance of adopting a risk-based approach in AI, and Assistant Professor Lim How Khang (SMU) explained the technical definition of

deterministic and non/deterministic algorithms in relation to consent.

The last session of the event – session five – encompassed topics related to AI and Tort Law. Mr Rajesh Sreenivasan, Head of Technology, Media & Telecommunications at Rajah & Tann Singapore LLP, chaired the session. First, Professor Anne SY Cheung (University of Hong Kong) provided an innovative perspective about which legal test should apply to defamation arising from automated speech generated by search engines. This was followed by Professor Gary Chan who addressed the issue related to the applicability of tort law (such as negligence and non-delegable duties) in respect of AI use in patient care. Chen Siyuan, Associate Professor at SMU, spoke about regulating autonomous vehicles and argued that using negligence and product liability principles might not be enough to deal with the challenges arising from AI use. To conclude this session, Mr Josh Lee Kok Thong, Legal Policy Manager (AI Governance) at IMDA referred to aspect of the Model AI Governance framework such as customer review management and concepts of repeatability and explainability of AI. Mr Rakesh Kirpalani, Director (Dispute Resolution and Information Technology) and Chief Technology Officer at Drew & Napier LLC commented on the importance of re-examining the traditional tortious liability regime by reference to which AI uses are regarded as “must-haves” and those AI technologies that are merely “good to have”.

Finally, Professor Gary Chan closed the event by thanking Dean Goh, Mr Yeong and NRF and IMDA for the financial support for CAIDG, all the speakers, moderators, chairpersons and commentators in the various panel discussions and sessions, the participants from the floor, co-convenor Associate Professor Yip Man and all SMU faculty (including Associate Professor Alvin See and Nicholas Liu), all of whom have contributed significantly to the success of the Conference.



ON-GOING PROJECTS

SMU - Microsoft Asian Dialogue on AI Governance

Asia is the source of many cutting-edge AI technologies and is also a leading region for the adoption of AI. However, such developments are not uniform or as influential across all Asian markets. Questions concerning the utility and sustainability of AI technologies are driving an increased debate about AI governance in the region – with many academic and research institutions actively participating in this debate. Governance is central in addressing social, economic and political reservations regarding the impact of AI technologies on Asian ways of doing business and ordering society. Despite this, there is no Asia-wide initiative that brings together researchers on AI governance.

An Asian research dialogue on AI governance would provide a framework for engaging the governance of AI technologies

from an Asian perspective bringing together a multi-disciplinary group of leading researchers on AI governance from academic institutions, across the region.

The key objective of the dialogue would be to foster the exchange of views on the governance of AI in Asia and deepen research collaboration in areas relevant to industry, governments, cultures and communities. The dialogue would contribute to greater coherence in AI governance across the region in areas where this is possible, by identifying areas of common understanding, while also recognising areas where there is a greater divergence of views, experiences, and capacities.

More details available at our website:

<https://caidg.smu.edu.sg/conference/smu-microsoft-asian-dialogue-ai-governance>

AI Ethics 4 Asia Hub

The AI Ethics Hub 4 Asia ('The Hub') is a space for developing conversations about the impact of ethics and principled design by looking at the whole anatomy of AI development and big data use.

We hold conversations between researchers, AI practitioners, policy designers and the community. These conversations grow from the recognition that while the push to develop AI and apply big data to all aspects of human decision-making is driven by concerns for economic growth and market sustainability, these technologies need primarily to produce social good and recognise human dignity in what they achieve.

Let's talk about Ethical AI!

The Hub offers an educational and audit facility for AI practitioners and their organisations to 'road-test' the reception of ethics and principled design at both personal and project levels. Opportunities are presented through The Hub for AI practitioners, technicians and designers to participate in creating a language for and an understanding of ethics as a vital regulator in specific operational, market and social contexts. The particular issues of decision-making

power and specialist knowledge in the anatomy of AI are worked with through real-life problems so that participants in the conversation can be confident when the applications of their work move out to communities of users they do so with ethical authorisation.

Shared Fairness Project

The Shared Fairness Project is designed to focus on one common and important feature of ethics and principled design, to inculcate attitudes and processes that will see the use of big data and the development of AI as fundamentally communal activities in which all participants share the responsibility and the benefits of fairness.

'Fairness' is a near-universal principle in all AI ethics documents. It has many interpretations: procedural, distributive, interpersonal, and informational. This research examines the ways that practitioners (particularly young millennial designers) attribute and distribute ethical responsibility for the AI products and services they help create.

Find out more here:

<https://caidg.smu.edu.sg/thehub>

Covid-19 Related Research Papers

The start of 2020 presented a lot of challenges with the Covid outbreak. The new fast spreading virus has resulted in a many changes to the way we live and work. The increased government surveillance and scrutiny of the daily movements of individuals has also raised concerns of data privacy and protection. The circuit-breaker measures has also helped to accelerate the growth of platform economies.

In response to this outbreak, our researchers have published the following papers:

1) "Coronavirus: Pandemics, Artificial Intelligence and Personal Data" by Associate Professor Warren B. Chik

- This article considers the benefits of AI to manage infectious diseases in the context of the Covid-19 pandemic, and how the ethical and legal considerations in relation to the data protection regime can and should respond to its use.

- <https://lawgazette.com.sg/feature/coronavirus-pandemics-artificial-intelligence-and-personal-data/>

2) "Ethics, AI, Mass Data and Pandemic Challenges: Responsible Data Use and Infrastructure Application for Surveillance and Pre-emptive Tracing Post-Crisis" by Professor Mark Findlay, Loke Jia Yuan, Nydia Remolina, and Benjamin Tham

- This paper argues that the use of AI-assisted surveillance, reporting, mapping, and tracing technologies has serious ethical and regulatory implications in the medium and long term in relation to individual dignity, civil liberties, transparency, data aggregation, explainability, and other governance challenges. It focuses on data protection and citizen integrity, and reflects on other surveillance methods outside the health context, e.g. initiatives implemented in the financial sector.

- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3592283

3) "An Ecosystem Approach to Ethical AI and Data Use: Experimental Reflections" by Professor Mark Findlay and Josephine Seah

- States, inter-governmental organisations, and technology firms have rolled out a 'new' vocabulary of ethics to prevent risky and irresponsible development of AI. However, there has been little input from AI practitioners. This paper offers a methodology - a 'shared fairness' approach - to address this gap.

- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3597912

4) "Regulating Personal Data Usage in Covid-19 Control Conditions" by Professor Mark Findlay and Nydia Remolina

- This paper focuses on the case for regulation recognizing crisis exigencies, personal data challenges, and policy and regulatory options to equitably address these challenges.

- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607706

5) "Data Imperialism: Disrupting Secondary Data in Platform Economies Through Participatory Regulation" by Professor Mark Findlay and Josephine Seah

- Data production and commercialization imperatives drive digital platforms to extract secondary data while maintaining an information access imbalance between those with big data and data analytics capabilities, and the uninformed data product. This article speculates about regulatory options available for workers on these platform economies.

- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3613562



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