Collaboration on Law & Technology: Workshop 1
Australian National University College of Law and SMU's Centre for AI and Data Governance

'Artificial Intelligence and the Law: Commercial Advantage, Administrative Dilemma and Professional Transformation'

9-10 April 2019
Venue – SMU School of Law

In April, the SMU Centre for Artificial Intelligence and Data Governance (CAIDG) held colloquium in collaboration with Australian National University's (ANU) College of Law about the challenges and opportunities presented by developing technologies to the transformation of law. The two-day event kicked off with presentations from both ANU and SMU, followed by an industry roundtable on the second day to seek and gather insights from a wider audience of regulatory stakeholders in Singapore.

Highlights, key questions, and individual presentation summaries are documented below.

Key Questions and Themes

Over the course of the first day of the colloquium, scholars presented draft papers and research ideas or plans, touching on possible common analytical and thematic interests and comparative frameworks leading to future ongoing research collaborations. Attendants and presenters had the opportunity to discuss and provide critical commentary on these works in progress and research agendas in order to enrich the discussions and projects. The meeting was significant for research stimulation in the manner that specific research possibilities and alliances were identified and developed at a researcher-to-researcher level.

From this meeting, the following major themes and questions were identified:

- Importance of context – the interface between AI/Big data and economies and societies are best understood by focusing on situational specifics (ie. Can the creations of AI lead to copyright? If AI facilitates alternative dispute resolution how can trust be maximised?)
- Need to make regulatory terminology more specific and applied – what is meant by transparency, trust, responsibility, ethics? Data and AI – what are their applications?
- Risk – what are risks associated with AI decision-making and automated data management? How is risk determined and what is the influence of perception?
- Is this a new challenge for regulation and governance? – Do algorithms just magnify pre-existing institutional and process challenges in areas such as the financial sector?
- What are the ways in which automated determinations can streamline and improve access to justice? What challenges are presented through automation?
- Can or should algorithms remove discretion from decisions on rights and benefits?
- What value frameworks are necessary to ensure that developments such as 'smart contracts' don't lose touch with the social purpose of contracting?

- If AI and automated data management can empower stakeholders in self-regulation, how can a 'race to the bottom' be avoided?
- What is the importance of bias in algorithmic decision-making?
- If 'data lakes' are becoming more consolidated in the hands of massive platform repositories, what can be done to ensure freer access?
- AI has great potentials in tracking provenance and policing fraud. – How??
- The importance of standardisation and challenges in the translation of standards into action
- Is human rights language valuable for the regulation of data access?
- Limits of machine learning in a 'fractured world' – unreal expectations
- Transparency versus information overload

Highlights from the Industry Roundtable

SMU hosted a half-day industry roundtable for the second day of the Colloquium. Invited representatives of industry and the public sector in Singapore were invited to share their insights and build on the themes addressed from the commentary from the day before. Professor Mark Findlay and Associate Professor Jolyon Ford moderated the event. Key discussion points and questions included:

- What are the limits to mechanical decision making, how far can it go, and can/should it go further?
- What are the types of contracts that you can and cannot automate? Disputes around them will continue and pose potential complications for the utility of smart contracts that make disagreements difficult to manage.
- At the same time, there are certain domains that will adopt such technologies, particularly where the risk remains low: smart contracts may have a big role to play in securing supply chains (e.g., fair trade products). Difficulties and complications arise in the use of these technologies in other sectors such as the financial industry and the derivatives market where the risk is higher.
- It is important to keep the human in the loop. There is a temptation to dream of these technologies being fully autonomous, but it would be more realistic to see their future in terms of human augmentation. What AI might be able to do, rather than taking over jobs, is to highlight discrepancies and red flags to individuals who will have to make the final decision.
- If humans are kept in the loop this way, the question then becomes: when and in what situations is it crucial for humans to be in the loop? Furthermore, are we placing larger and more complex cognitive loads onto people who may be ill-equipped/insufficiently trained to handle such data overload?
- In turn, the questions that regulators will need to address is whether and how regulation can grow with and guide these augmentations. In addition, how might what has been typically a principled-based discussion transform into more original and tailored regulation? Is regulatory sandboxing the way to go?
- In addressing questions of trust around automated technologies, there is a general consensus regarding the need for transparency and algorithmic accountability. Nonetheless, challenges ahead include grappling with cultural expectations and perceptions (of both use and risk), and the difference in languages (between how 'data' is understood by software developers and regulators, which in turn influences how the public perceives it). An emerging problem is also that we may increasingly

be demanding transparency around decision-making processes that we were previously comfortable with not requiring to the same extent or in the same detail.

JOLYON FORD (ANU)
on AI regulatory frameworks

Professor Ford proposed paper draws on theories of principled-based regulation developed in very different regulatory contexts to map out and explore a theoretical basis for regulatory approaches to ethical AI that move beyond the generality of broad principles while avoiding distractions that detailed prescriptive rules are workable or appropriate in a fast-changing area where innovation is at a premium. He questioned if we should leave AI in the self-regulation space and brought to the table human rights perspectives in marketing AI as an approach that could contribute to the regulatory debate surrounding data governance. What would be the ideal attributes of a coherent regulatory scheme (principle-based vs rule-based) is for his research, a key regulatory question. He distinguished ethical from trustworthy parameters, as well as compliance with human rights requirements in an individualized form. Some questions that he is exploring include looking at how the appropriateness of adapting existing frameworks such as the 2011 UN Guiding Principles on Business and Human Rights can be understood; and the difficulties of distinguishing AI applications in challenging 'rights contexts' (e.g., civilian vs. military applications). The lack of information on the impact of these technologies for human rights complicates applications of any principle-based regulation in the era of artificial intelligence? In turn, he inquiries into the limits of the discourse of human rights (and IHL) at a time where there are large, AI-enabled power transfers in society.

ONG EE ING & LOO WEE LING (SMU)
on understanding consumer perceptions of AI

Their presentation showed the current development of a survey on consumer attitudes towards AI, with a focus on the intersection of AI privacy/security issues and ethics. Their survey is meant to uncover consumer attitudes that may validate or invalidate assumptions that would in turn guide regulation. The professors are in the process of refining their survey questions and are looking to ensure that they cover fields of opinion to support data analysis across several key ethical concerns. The presentation stimulated discussions and advice around the survey methodology, and possible scoping. This empirical research on consumer attitudes is a cross-jurisdictional including jurisdictions such as Singapore and Canada. Additionally, there is intended a follow latitudinal study to verify some of the finding of the first survey, participants in the colloquium provided feedback regarding the methodology, types of questions, scope of the study and similar literature recently published.

SCOTT CHAMBERLAIN (ANU)
on the scalability of trust and justice

His presentation focused on a work that explores how to scale trust as we automate various decision-making processes in legal service delivery. His model offers delivering scalable access to justice and justice outcomes by collapsing the work of thousands of bureaucrats, police, lawyers, accountants and administrators into predictable, replicable and certain

automated process dynamics. Scott's research looks forward to exploring how disintermediation, brought about by blockchain technology, could help to improve dispute resolution systems and consequently allow greater access to justice. Additionally, on a broader scope, this research project will study the potential and risks of implementing digital identity as a Decentralized Application (Daap) and the use of smart contracts to automate commercial decision making. Participants commented on the complex relations between smart contracts and more conventional (and socially reliant) contract arrangements, and how efficiencies through automation of decision making may be premised on another notion of justice.

Session Two

MARK FINDLAY & JOSEPHINE SEAH (SMU)
on the impact of AI in labor markets

Their research is exploring the labour market, organisational, social, and normative conditions at play when AI governance is advanced in a self-regulatory framework. Two dimensions of AI governance are: (1) the governance of AI's impact on labour-force and labour markets, and (2) the potential that AI, data-driven technologies, and access to automated data management might offer to regulation. Confronting the question of whether we might develop inclusive and empowering regulatory opportunities for otherwise-vulnerable market stake-holders, the research looks at how AI and automated data management technologies might be included in the self-regulatory project to enhance transparency and accountability by addressing key information asymmetries now limiting work-force self-regulation.   Reactions to the presentation focused on whether the model did much more than enhance pre-existing bargaining power. It is clear that the contexts of the self-regulatory model need to be elaborated particularly as disruption is employed as an analytical tool. Further, the focus on labour-force rather than occupation was mused.

GARY CHAN (SMU)
on AI in recuiting processes

This research explores AI bias in employment decisions. Using AI to recruit talent could create discrimination in labor markets because of bias in the model or in the data. His discussion of algorithmic bias focuses on processes and/or decisions around job advertisements, screening, interviews, selection, promotions and other matters of employment determination. It considers measures to mitigate the problem of algorithmic bias in the employment context, and addresses how the concept of 'Explainable AI' might play out in uses of AI for employment decisions. The discussion that followed explored the idea of 'Explainable AI', raising questions of how regulators may eventually have to contend with an information overload, and the irony that we might need to turn to AI to then sieve through 'audits' of AI, and the quality of that data – which would in turn compound the regulatory cycle. Another question raised was how regulators might encourage a race to the top here when corporations often use regulation to squeeze out competition?

SALLY WHEELER (ANU)
on smart contracts

Sally's research looks at smart contracts and social relationships. She's exploring whether smart contracts signal a death knell for contracts of social solidarity, or whether we're witnessing an increase in relationality and predictability above empathy and social bonding. Relationships between programmers and lawyers, both of whom are coming from different understandings of what a contract is meant to do need to be dis-entangled. Comments from the room touched on whether automated languages mean cementing concepts, and if so how should regulators address the difficulty of having competing ideas and holding them in tandem with aspirations for certainty and efficiency? The intersubjectivity of life makes the application difficult for smart contracts that require a high degree of specificity.

Session Three

HENRY GAO (SMU)
on data regulation in trade agreements

Professor Gao presented his work titled ´Data Regulation in trade agreements: three digital kingdoms. US, EU and China´, offering a comparative perspective of three different approaches to data protection and the challenges these different approaches create for trade agreements, including both the WTO, free trade agreements, and the new negotiations on e-commerce / digital trade. Prof Gao suggests that different interests for, and histories of regulation might explain the variations and separate emphases distinguishing the three regimes. The differences identified and de-constructed may suggest a fragmented future for relations between data protection and trade, and these developments may in turn limit the role of the WTO while leaving more room for bilateral trade agreements. Participants discussed the importance of data protection regulation in the era of digitalization and commented on some provocative interpretations of the nature of data (an asset? a transaction?).

Philippa Ryan (ANU)
on blockchains, transparency, and trust

Professor Ryan's doctoral research re-classified the liability of third parties for breach of legal trust, and her forthcoming work explores how social trust is managed in e-business (Trust and Distrust in Digital Economies). She presented the projects she is currently working on: sustainable development goals for blockchain standards, Initial Coin Offerings discussion paper and the need of an ethical framework for AI. She also presented a blockchain use case of tokenized registered IOUs. IOUs are tokens issued on a platform that are redeemable for a fungible asset. The use case she is currently exploring relates to the red wine tracking process for the purpose of ensuring authenticity. Another project that she is currently applying is a matrix of transparency and trust: a 'transparency sandwich' where governance and code might be the top and bottom pieces while the middle layers are relationships and entities protected by IP. Comments from the floor discussed operational domains and appetites for risk (where are you using automation? How are you using it?); as

well as understanding how different individuals/groups may perceive risk that will raise complications for the types of transparency demanded and the appreciation of risk underpinning decisions to regulate.

Dorcas Quek Anderson (SMU)
on algorithmic dispute resolution

This presentation explored algorithmic dispute resolution and its implications in procedural justice. There is a growing trend in the courts' reliance on online dispute resolution, and the implications for court users' trust in the judiciary (and other human/professional actors). Professor Dorcas explained how AI tools are currently working for online dispute resolution, presenting some use cases such as Smartsettle (a software for algorithmic assisted negotiation) and how these could eliminate stages within the traditional dispute resolution procedures. Trust will be considered in terms of procedural justice, a socio-psychological concept referring to perceptions of fairness.

Session Four

DILAN THAMPAPILLAI (ANU)
on AI and copyright law
Dr. Thampapillai's research focuses on a gap he identifies in Australian IP regulations and case law: the recent rapid development of artificial intelligence technologies (AI) has promoted a situation wherein useful works created by non-human authors are largely unprotected by conventional copyright frames. The paper questioned what is the correct approach to protect computer-generated-works through the use of deeming provisions? Would the recognition of such creations in a similar fashion to human creativity solve the protective dilemma?   Participants speculated on how autonomous a robot/AI could detach from human responsibility and the problems related to accountability of developers, programmers and users of AI. Further, if human intervention is necessary somewhere in the creative chain, then why are we deeming the nature of the creation to be fundamentally different at law?

WILL BATEMAN (ANU)
on balancing predictability and discretion in algorithmic decision making

Dr. Bateman presented some thoughts on the use of algorithms in legal decision making. He focused on the importance of introducing fairness, transparency and accountability considerations around algorithm design and application, especially in the context of automated decision-making programs that replace or augment human decision-making. Employing the contexts of tax assessment and enforcement, social security and immigration benefit determination he highlighted the problems with different understandings of algorithmic purposes. His research seeks to find the balance in using automation for the delivery of services seeking predictability and need for discretion as the decision is elevated (addressing questions of justice and fairness). He highlighted the major limitations with biased data-sets currently being used in machine learning, and raised questions about the circumstances in which AI might be used in legal decisions which are determinative.

AURELIO GURREA-MARTINEZ (SMU)
on the challenges and opportunities of AI in the financial sector

This presentation described the scope of the research conducted by Professor Martinez, which seeks to analyze the opportunities, risks and regulatory challenges of the use of AI in the financial industry. It pointed out that, while the use of roboadvisors and automated credit assessments based on algorithms may bring significant benefits for financial consumers, investors, and financial institutions, some risks might emerge. This study proposes a set of strategies to address the risks and regulatory challenges of the use of AI in the financial industry, such as the possibility of requiring an external auditor who can evaluate the accuracy and biases of the data and models used. This proposal shares common ground with previous presenters, such as professor Gary Chan who proposed the same solution for the use of AI in recruiting processes. There was some vigorous discussion about the appropriateness and viability of algorithmic auditing.

This overview was prepared by Mark Findlay, Nydia Remolina, and Josephine Seah.