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Panel 1

Big Data and AI for Future Government:
Opportunities and Challenges in Public Management and Policy

Moderator: **Prof. M. Jae Moon, Yonsei University**

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Big Data Informatics and New Policy Sciences:

Opportunities and Challenges

PROF. M. JAE MOON, DEAN AND UNDERWOOD DISTINGUISHED PROFESSOR, YONSEI UNIVERSITY

SABINNE LEE, RESEARCH ASSOCIATE, KOREA INSTITUTE OF PUBLIC ADMINISTRATION

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Big Data Science Programs for Government and Community and Decision-making:

Theory, Design and Outcomes

ERIC W. WELCH, PROFESSOR, SCHOOL OF PUBLIC AFFAIRS, ARIZONA STATE UNIVERSITY

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Explaining the Divergence of Application of Big Data and AI across National Contexts: A Comparative Study of Data Governance System

PROF. WILSON WONG (黃偉豪), PROGRAMME DIRECTOR AND ASSOCIATE PROFESSOR, DATA SCIENCE AND POLICY STUDIES PROGRAMME (DSPS), THE CHINESE UNIVERSITY OF HONG KONG

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Artificial Intelligence and Public Sector Innovation in a Data-driven Society

DR. GIANLUCA MISURACA, EXECUTIVE DIRECTOR, AI4GOV MASTER, UNIVERSIDAD POLITÉCNICA DE MADRID (UPM) AND VICE PRESIDENT ON TECHNOLOGY DIPLOMACY, INSPIRING FUTURES.

Prof. M. Jae Moon
Moderator and
Presenter
Yonsei University
Korea

Prof. M. Jae Moon is Dean of the College of Social Sciences and Underwood Distinguished Professor of the Department of Public Administration as well as Director of the Institute for Future Government at Yonsei University.

He co-chaired the Infectious Disease Study Group of the National Research Council for Economics, Humanities, Social Sciences under the Prime Minister's Office. He is an elected Fellow of National Academy of Public Administration (NAPA). He served as International Director of American Society for Public Administration and Vice President of Korean Association of Public Administration as well as the Korean Association of Policy Studies.

He was selected as one of world's 100 most influential people in Digital Government 2018 and 2019 consecutively by Apolitical which is a London-based leading nonprofit organization. He also received the Order of Service Merit-Red Stripe from the Government of the Republic of Korea for his contribution to the public sector innovations as well as Donald C. Stone Award from the American Society for Public Administration in 2020.

Presentation blurb (with **Sabinne Lee**, Research Associate, Korea Institute of Public Administration)**:**

Policy sciences has been facing with a set of new challenges as well as opportunities with advancement of big data informatics and their applications in various policy areas including education, environment, transportation, public health, etc.

This study attempts to investigate the linkage between big data and policy sciences particularly focusing on the nature of policy processes, issues of legitimacy and accountability, as well as policy actors and outcomes of public policies.

For the past decade, growing big data and powerful informatics have offered compelling opportunities for evidenced-based public policy primarily thanks to unprecedented availability of policy-related big data which is both quantitatively and qualitatively different from conventional data in terms of its scope, scale, structure, and impact. With growing computing power and analytical tools, big data becomes increasingly important original materials which are utilized, examined and interpreted for identifying current and future policy problems, analyzing positions of stakeholders, assessing policy tools and alternative solutions, and evaluating policy effectiveness. The availability and utility of big data offer great potential for improving not only the quality of policy choices but also the policy outcomes, which offers an optimistic perspective on big data-based new policy sciences. However, some students of policy sciences still remain reserved because of skepticism about continued politics in policy decisions and implementation processes, as well as concerns about limitations of informatics and the nature of big data which is often possibly biased and incomplete.

This study will review the prospect of big data-based new policy sciences then examine its opportunities and challenges based on selected cases found in various countries.

Prof. Eric W. Welch
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Prof. Eric W. Welch is a professor in the School of Public Affairs at Arizona State University where he teaches decision-making, organization theory, and science and innovation policy. Dr. Welch currently directs the Center for Science, Technology and Environmental Policy Studies (C-STEPS) at ASU.

His research interests include digital government, science and technology policy, and organizational adaptation to climate change.

Dr. Eric Welch has published over 100 peer-reviewed articles, refereed proceedings and book chapters in journals such as Social Networks, Government information Quarterly, Journal of Public Administration Research and Theory, and Public Administration Review. Most recently Dr. Welch has published two edited volumes on digital government, one on e-government research and another on broadband evaluation.

Presentation blurb:

Government funding agencies are increasingly demanding that Big Data university research is more directly relevant to government and stakeholders as they face rising global challenges. Within this context, Big Data research projects are increasingly accountable to the communities they study. Yet, 'societal impact' of research is not the only demand placed on university funded Big Data research projects.

As major actors in society, universities are located at the crossroads of multiple institutional logics – societal impact, market, academic, openness logics – all of which compete in universities to justify university decisions and actions. Universities and research projects reconcile tensions among conflicting logics in ways that generate variability in the impact of Big Data research on government and community decision making.

This paper examines how Big Data university research impacts government and community decision making in three main parts. First, it integrates theory on competing institutional logics with the complex role of universities in society to produce a multi-institutional framework that links theory and practice for publicly funded Big Data research. It also presents three case examples of Big Data scientific research programs in the United States to demonstrate the framework. Finally, the paper examines how these programs are held responsible through performance assessments that evaluate the extent to which projects actually accomplish multiple goals, including impact on governmental and community decision making outcomes.

Conclusions reflect on future directions and potential of university Big Data research to advance governmental decision making.

Professor Wilson Wong (黃偉豪)
Chinese University of Hong Kong
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Professor Wilson Wong is Programme Director and Associate Professor of the Data Science and Policy Studies, Faculty of Social Science, the Chinese University of Hong Kong.

Professor Wong's major research areas include data science and governance, digital governance, public management, public budgeting and finance, and comparative public policy. He is a Lead Area Editor of Data & Policy, a journal by Cambridge University Press dedicated to the impact of data science on policy and governance, the regional editor of the Asian Journal of Political Science and a member of the editorial committee of International Review of Administrative Science.

He received his MPA and Ph.D. in Public Administration from the Maxwell School of Public Affairs, Syracuse University, USA. He served as a visiting fellow at The Brookings Institution and a visiting scholar at Harvard University.

His research outputs have been published in major international journals such as Administration and Society, Asian Survey, China Review, Policy Studies Journal, Public Administration Review, Public Administration and Development, Public Money and Management, Governance, and Journal of Public Administration Research and Theory.

Presentation blurb:

The main objective of the paper is to use data governance system as a critical variable to explain the divergence of application of disruptive innovation and technologies of Big Data and AI across national contexts.

The analysis would be empirically illustrated by case studies including the General Data Protection Regulation (GDPR) in the European Union (EU) and the Social Credit System in China. Technology is never neutral in its adoption and impact and the diversity of how it is being used reflects the variations in the embedded national contexts. Big data and its enabled technologies and innovation, including AI, Internet of Things (IoT), smart cities, can be classified as disruptive innovation which creates new challenges, including both threats and opportunities, for public administration and urban governance and requires a new framework of data governance to avoid its abuses.

The two selected cases are representative in nature in reflecting the extreme and therefore theoretical-rich and policy-inspiring scenarios in the application of technologies and the related data governance system. Developing the capacity to identify the factors which affect the use of disruptive technologies enabled by AI and Big Data would enhance the extent to which scholars and policymakers can predict the impact of those technologies with the hope of having the ability to manage its uses and outcomes.

The paper would conclude with an examination of the role of universities in helping governments and nations to develop an effective data governance system to embrace the co-existence of good governance and technological progress.

Dr. Gianluca Misuraca
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Spain

Dr. Gianluca Misuraca is founder and Vice President on Technology Diplomacy and International Relations of Inspiring Futures (IF), a global advisory consultancy in Strategic Foresight, Social Innovation and Digital Governance with headquarters in Lausanne and Seville.

He is also an advisor to several International Organizations, and development institutions worldwide. Among his key assignments he is currently leading, on behalf of the European Commission's Service for Foreign Policy Instruments (FPI) and DG CONNECT, the multi-year facility support initiative "International Outreach for human-centric Artificial Intelligence" (InTouchAI.eu).

As part of his academic roles, Gianluca is the Executive Director of the Master on Artificial Intelligence in public services (AI4GOV) led by the Universidad Politécnica de Madrid, a Senior Research Associate at the Department of Design of Politecnico di Milano and a Research Fellow at the Department of eGovernance and Administration of Danube University Krems in Austria. Furthermore, he is a Special Advisor on Democracy in the Digital Age for Re-Imagine Europa (RIE).

Gianluca Misuraca holds a Phd in Management of Technology at the Ecole Polytechnique Fédérale de Lausanne (EPFL)

Presentation blurb:

The presentation will discuss main insights and lessons learned from the analysis of the challenges and opportunities of using AI to improve government operations and public service delivery, putting emphasis on the need of addressing the governance "of, with & by" AI to cope with the dilemmas policy-makers are confronted with in the digital age.

Building on this, scenarios for Digital Europe at the horizon 2040 will be outlined, debating on the key dimensions and policy implications for future-proof institutional re-design and public sector innovation.