FRIS SYMPOSIUM ON SOCIAL ROBOTS AND ETHICAL DESIGN

2023 7.18 – 7.20

Venue:
Tohoku University Aobayama Campus
a. Aobayama Commons, Suisei Hall
b. FRIS Seminar Room, Lecture Room 1 & 2
c. Hirata Lab (demo)

The Program
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東北大学
学際科学フロンティア研究所
Frontier Research Institute for Interdisciplinary Sciences

8:30-9:00	Registration	Suisei Hall, Aobayama Commons
9:00-9:10	Opening	Yueh-Hsuan Weng
9:10-9:30	Society Where Everyone Lives a Healthy Life by Coexisting with AI Robots	Yasuhisa Hirata
9:30-10:00	IEEE Standards Association AI Ethics and Governance	Ruth Lewis
10:00-10:30	Hard-Won Lessons from Writing an Ethical Standard for Empathic AI	Ben Bland
10:30-10:45	Coffee Break	
10:45-11:15	Overview and Framework of Human-Machine Teaming	Fumihiro Maruyama
11:15-11:45	Empathy, Governance, Compliance: Moral Lessons from Replika	Andrew McStay
11:45-12:15	The Issue of Liability of Autonomous Vehicle Accidents – A Comparative Perspective	Alison Xu
12:15-13:30	Lunch Time	
13:30-14:00	Unveiling the Veil: the critical Issue of theomorphic robots and explainability	Gabriele Trovato
14:00-14:30	Communication between Physical Assistive Robots and Their Users	Mizuki Takeda
14:30-15:00	AI Governance, Data Flow, and International Trade	Phoebe Li
15:00-15:30	The Ethical Issues of Socially Assistive Robots in Long-term Care Settings in Taiwan— A Health Professional's Perspective	Yu-Chen Lin
15:30-15:45	Coffee Break	
15:45-16:15	Natural Law and Natural Design of Robots	Takashi Izumo
16:15-16:45	Enhancing Legal Communication through Information Design and Visualization	Hilja Autto
16:45-17:00	Closing Remark	Yueh-Hsuan Weng

7.18.2023

Keynote Speech (9:10-9:30)

Society where everyone lives a healthy life by coexisting with AI Robots

Yasuhisa Hirata

Professor, Department of Robotics, Tohoku University
Project Manager, Moonshot R&D Program, JST

Abstract:
This talk introduces our project under the Moonshot R&D Program in Japan. Our project aims to create a collective of adaptable AI-enabled robots available in a variety of places. Each robot will be usable by anyone at any time and will adjust its form and functions according to the individual user to provide optimal assistance and services. We envision that the co-existence and co-evolution of a wide variety of robots and people will create a vibrant society in which all people can participate.

Regular Speech (9:30-10:00)

IEEE Standards Association AI Ethics and Governance

Ruth Lewis

Chair, Society for Social Impact of Technology, Standards Committee (SSIT/SC), Technology Foresight

Abstract:
Developments in AI technologies are advancing at a rapid pace. There is great opportunity to participate in the growing global market and to solve humanity's endemic problems. But do we as a society have the wisdom to prevent misuse of this new technology? IEEE Standards Association has developed a comprehensive suite of global AI standards and a Certification program to put high level AI principles for trustworthy AI into practice which can assist in the wise development and use of these technologies. This presentation will provide a high-level overview of the material currently available.

Regular Speech (10:00-10:30)

Hard-Won Lessons from Writing an Ethical Standard for Empathic AI

Ben Bland

Independent consultant. Chair, IEEE P7014 Standard for Ethical Considerations in Emulated Empathy in Autonomous and Intelligent Systems. Member & Webmaster, Society for Social Implications of Technology Standards Committee.

Abstract:
Global standards for the ethics of autonomous and intelligent systems are a new idea and bring plenty of challenges. As Chair of IEEE P7014, Standard for Ethical Considerations in Emulated Empathy in AI, Ben Bland has learned some difficult lessons about how to write a standard with a global group of subject experts, and how not to do it. Hear about the good, bad and ugly moments of the journey so far, and ideas for future standards development.

Regular Speech (10:45-11:15)

Overview and Framework of Human-Machine Teaming

Fumihiro Maruyama

National Institute of Advanced Industrial Science and Technology (AIST)

Abstract:
This presentation will provide a high-level overview of the material currently available. Human-machine teaming is defined as "integration of human interaction with machine intelligence capabilities" in ISO/IEC 22989:2022. In this presentation I will give an overview of human-machine teaming with its examples where people and machines such as AI and robots work as a team to solve problems. Then I will present its framework that organizes the relationship between humans and machines into five patterns, depending on the hierarchical relationship between human and machine and whether the human or machine performs the actual task. The framework can be used to analyze human-machine teaming, identify its challenges and discuss associated issues including ethics.

Regular Speech (11:15-11:45)

Empathy, Governance, Compliance: Moral Lessons from Replika

Andrew McStay

Bangor University, Wales, UK

Abstract:
This talk considers Replika, empathetic chatbots, their design, how they should be governed, and what can be learned for a compliance-by-design approach to chatbots. As chatbots are seen by some as a solution for mass loneliness, and that people are already forming relationships of varying natures with chatbots, there is urgency for considering governance dimensions. When applied to automated empathy, a compliance-by-design approach is found to be limited and challenging, principally because strong empathy is based on responsibility and solidarity. Empathetic chatbots may be compliant, but it is hard to see how they can be moral.

Regular Speech (11:45-12:15)

The Issue of Liability of Autonomous Vehicle Accidents – A Comparative Perspective

Alison Xu

WIAS, Waseda University

Abstract:
A driverless operation on public roads is on the horizon. Yet, the question remains whether national legal systems are well equipped to deal with new challenges posed by highly autonomous vehicles or driverless cars. In recent two years, countries including Germany, Japan and China have published new legislation regulating Avs on public roads. This talk will discuss the new legal framework of civil liability which intends to discharge drivers from liabilities arising from an accident from a comparative law perspective and the impacts it may have on the industry.

Regular Speech (13:30-14:00)

Unveiling the Veil: the critical Issue of theomorphic robots and explainability

Gabriele Trovato

Shibaura Institute of Technology

Abstract:
The recent development of new theomorphic robots has brought forth a critical issue: explainability. As these robots peculiarities significatively differ from other social robots, much has been debated about the the reasoning behind their actions becomes imperative. This presentation explores the challenges of the existing robots in the religious domain, and offers a different view over the need of explainability in this context at the intersection of technology and spirit

Regular Speech (14:00-14:30)

Communication between Physical Assistive Robots and Their Users

Mizuki Takeda

Toyobashi University of Technology

Abstract:
One of the reasons why care robots have not yet become so popular is the problem of a sense of unease. Because people do not understand what robots with AI do and why they do it, they feel danger and anxiety. Therefore, I have proposed a design methodology for care robots that is accountable to various stakeholders. The care robot can be used with a sense of ease through communication using the interface. The talk will explain this design and validation experiments using an actual care robot.

Regular Speech (14:30-15:00)

AI Governance, Data Flow, and International Trade

Phoebe Li

Reader in Law and Technology, Sussex Law School, University of Sussex, UK

Abstract:
AI and data sovereignty has been the primary goal in national AI regulation and governance agenda. In the industry 4.0 era, States have been developing their own AI strategies for their industry's competitive advantage in the international supply chain. In addition to economic consideration, national security is also a key driver for asserting digital sovereignty. Divergence in national or regional AI regulations thus leads to 'digital fragmentation' (Simone J. Evenett and Johannes Fritz, 2022). This paper examines the conflicting tensions in data governance, demonstrating the tension between digital sovereignty and international trade obligations by optimising their regulatory trajectories in data protection and intellectual property. I will examine the emerging trends in international regulatory interoperability by examining the UK's accession to new trade agreements such as CPTPP (Comprehensive and Progressive Agreement for Trans-Pacific Partnership), taking consideration of requirements including cross-border data sharing, data localisation, and disclosure of source code.

Regular Speech (15:00-15:30)

The Ethical Issues of Socially Assistive Robots in Long-term Care Settings in Taiwan— A Health Professional's Perspective

Yu-Chen Lin

Department of Occupational Therapy, Da-Yeh University, Taiwan

Abstract:
By 2026, Taiwan is set to become a super-aged society, making elderly care a pressing concern. Although socially assistive robots have been developed in recent years, only a few have been used in the care industry. This could be attributed to the constraints posed by current technological capabilities and the persisting gaps in meeting clinical requirements. The ethical considerations related to the use of socially assistive robots from the clinical demand in Taiwan were discussed.

Regular Speech (15:45-16:15)

Natural Law and Natural Design of Robots

Takashi Izumo

Associate Professor, Nihon University

Abstract:
Natural law theory is a cornerstone of traditional European legal thought. It attempts to derive ethical principles from the intrinsic nature of entities. However, this approach has been criticised on the grounds of theoretical impossibility. Moreover, the potential for introducing bias among citizens has been identified as an additional concern. This discourse aims to critically review natural law theory from the perspective of foundational naturalism. Given the current state of the natural sciences, the speaker argues for the paramount importance of incorporating robustness and sustainability into the design of robots in order to adaptively accommodate future changes.

Regular Speech (16:15-16:45)

Enhancing Legal Communication through Information Design and Visualization

Hilja Autto

Young researcher, University of Lapland. Project researcher, University of Vaasa. Independent contract design consultant.

Abstract:
Traditional legal language tends to be overly legalistic and difficult to understand. It contains a lot of information and lacks design elements and user-friendliness. However, there is hope on the horizon. This presentation will explore, through examples, the possibilities of information design and visualization and how they can help to overcome these obstacles and to re-imagine legal communication.