Special Virtual Meeting: Technology & Consciousness Initiative
Creative Explorations in Artificial Intelligence, Robotics, and Autonomous Systems

Martedì 4 agosto 2020: 18:00 – 21:00 CET

Coordinatori della Tavola Rotonda:

John Murray, College of Science San José State University California, United States. *jxm@acm.org*

Antonio Chella, Robotics Laboratory, University of Palermo, Italy. *antonio.chella@unipa.it*

La rapida proliferazione di sistemi e dispositivi di Intelligenza Artificiale altamente interconnessi ha prodotto importanti trasformazioni in molti settori dell'industria e del commercio, dell'istruzione, dell'intrattenimento, delle comunicazioni, ecc. Questi sviluppi hanno introdotto delle difficili sfide etiche e sociali per i progettisti, gli operatori e gli utenti dei sistemi di Intelligenza Artificiale.

Queste problematiche hanno finora ricevuto un'attenzione relativamente modesta al di fuori del mondo accademico. Alla luce di queste premesse, è importante esaminare un quadro di riferimento a lungo termine sull'IA per esplorare e implementare delle sensibilità - come l'espressione emotiva, l'agenzia morale, la consapevolezza culturale, ecc. – nei sistemi di IA. Considerando una prospettiva storica, dobbiamo usare le intuizioni nate nelle precedenti rivoluzioni tecnologiche del XIX e XX secolo per analizzare le strategie etiche, sociali, legali, scientifiche e industriali della comunità e degli stakeholder.

Guardando al futuro, è necessario analizzare le innovazioni emergenti in aree nuove, come l'aumento delle prestazioni cognitive dell'individuo e del gruppo, e la progettazione eticamente allineata dell'IA centrata sull'uomo, che potrà essere utilizzata per informare i decisori politici, gli educatori e i leader sulle strategie sostenibili per i futuri investimenti sella ricerca.

La tavola rotonda riunisce ricercatori e professionisti internazionali provenienti dall'Intelligenza Artificiale e da discipline diverse quali le arti, le discipline umanistiche e le scienze cognitive per affrontare questi argomenti e scambiare intuizioni e visioni.

Gli interessati ad assistere in diretta alla tavola rotonda possono contattare Antonio Chella antonio.chella@unipa.it per ricevere l'invito. La tavola rotonda sarà registrata e resa disponibile mediante i canali dell'Università di Palermo.

Agenda:

Tuesday August 4, 2020

18:00 (CET) 12:00 (EDT) 09:00 (PDT)	Welcome, Networking, (Re)New Friendships
18:30 (CET) 12:30 (EDT) 09:30 (PDT)	Robot Inner Speech and Artificial Self-Awareness *Antonio Chella and Arianna Pipitone, U of Palermo, Italy*
18:40 (CET) 12:40 (EDT) 09:40 (PDT)	Fear of a Bot Planet: Anthropomorphism's Role in AI Communication *Robin Zebrowski (Beloit College, WI, USA)*
18:50 (CET) 12:50 (EDT) 09:50 (PDT)	Design Strategies for Engineering New Intelligence *Florent Kirchner and Zakaria Chihani (CEA, Saclay, France)*
19:00 (CET) 13:00 (EDT) 10:00 (PDT)	Robots and Choreography: Imitating, Improvising, and Expressing Feelings *Eric Gressier-Soudan, Micheline Lelievre, Violette Ange (CNAM/Pignon Sur Rue, Paris, France)*
19:10 (CET) 13:10 (EDT) 10:10 (PDT)	Artificial Intelligence and Understanding Cultural Context *Julie Carpenter (Accenture, San Francisco, CA, USA)*
19:20 (CET) 13:20 (EDT) 10:20 (PDT)	Refreshment Break, Guest Introductions, Announcements
19:30 (CET) 13:30 (EDT) 10:30 (PDT)	Artificial Phronesis: Self Aware Ethical Decisions for Robots *J Sullins (Sonoma State U, CA, USA)*
19:40 (CET) 13:40 (EDT) 10:40 (PDT)	TBD *Damien Williams (Virginia Tech, VA, USA)*
19:50 (CET) 13:50 (EDT) 10:50 (PDT)	TBD *Owen Holland (U of Sussex, UK)*
20:00 (CET) 14:00 (EDT) 11:00 (PDT)	What is Artificial Intelligence? *David Gamez (Middlesex U, UK)*
20:10 (CET) 14:10 (EDT) 11:10 (PDT)	Panel Discussion
21:30 (CET) 15:30 (EDT) 12:30 (PDT)	Happy Hour Conversations, Future Plans, Farewells

Specialist Presenters and Topics:

- Antonio Chella and Arianna Pipitone (University of Palermo, Italy)
  Robot Inner Speech and Artificial Self-Awareness
  The psychological literature claims that inner speech capability is linked to self-awareness. We discuss a cognitive architecture for robot inner speech where the covert dialogue is modeled as a loop in which the phonological store of the robot hears the inner voice produced by the hidden articulator process of the robot itself. Thus, the necessary ingredients for the generation of inner speech are already present. A critical test bench is the analysis of the impact of robot inner speech capabilities in trustworthy human-robot interactions.

- Robin Zebrowski (Beloit College, Wisconsin, USA)
  Fear of a Bot Planet: Anthropomorphism's Role in AI Communication
  There have been recent high-profile arguments about whether it can ever be ethical to create a humanoid robot that appears intelligent. We draw upon conceptual metaphor and cognitive linguistics to argue that this fear is misplaced, and that we must go to the opposite extreme: we must build robots that look, generally, like us, if we want to be able to communicate successfully with them, and if we want them to develop anything like a human mind.

- Florent Kirchner and Zakaria Chihani (CEA, Saclay, France)
  Design Strategies for Engineering New Intelligence
  How do we approach the development and deployment of ethically fairer and safer autonomous products and systems? What can we learn from previous scientific and industrial revolutions that will help us define the ethical, social, legal, and political strategies for modern society?

- Eric Gressier Soudan (Conservatoire National des Arts et Métiers, Paris, France), Micheline Lelievre, Violette Ange (Pignon Sur Rue, Paris, France)
  Robots and Choreography: Imitating, Improvising, and Expressing Feelings
  What are the high-level interrelationships among robot movement, emotions, empathy and computer science? We have already succeeded in extracting specific patterns for individual robot choreography; now we seek to extend these to groups of coordinated robots acting in unison. Performance goals have already been established for autonomous systems playing chess and Go. Can we define equivalent tests to evaluate the abilities of robot teams to mimic human artistic expressions in dance?

- Juile Carpenter (Accenture, San Francisco, USA)
  Artificial Intelligence and Understanding Cultural Context
  Why does AI need to learn about human culture in order to effectively communicate with people in cooperative or collaborative scenarios? How will this affect AI's understanding of context in AI-human communication? How much cultural knowledge is "adequate" for AI working with people in dynamic environments? Or,

why attempt to limit AI's understanding of culture and not just let it learn without limits? What are the larger ethical ramifications for people, if we begin successfully imbuing AI with a human-like understanding of culture, even if it is limited?

- John Sullins III (Sonoma State U, California, USA)
  Artificial Phronesis: Self Aware Ethical Decisions for Robots

  Summary TBD

- Damien Williams (Virginia Tech U, Blacksburg VA, USA)
  Title TBD

  Summary TBD

- Owen Holland, (U of Sussex, UK)
  Title TBDs

  Summary TBD

- David Gamez (Middlesex U, UK)
  What is Artificial Intelligence? s

  Summary TBD

Participant Bios:

Violette Ange is a dancer, musician and also costume designer. She collaborates with Emmanuelle Vo-Dinh, Centre chorégraphique National du Havre, Opera de Lille, etc. She joined the Pignon Sur Rue artists' collective in 2013, where she composes her own works, including choreographic or music projects.

Julie Carpenter is a scientist at the Accenture Digital Experiences Lab, San Francisco. Her primary research focuses upon the design and context of use of AI and robots as they influence user trust, (potential) emotional attachment to these systems, and operator decision-making in human-AI collaborative or team interactions. This work situates patterns of human-technology interaction within larger cultural contexts and social systems, an approach which helps to predict future emerging patterns of human behavior based on these findings.

Antonio Chella is a Professor of Robotics and the Director of the Robotics Lab at the Dept. of Engineering of the University of Palermo. His primary research is on Machine Consciousness, Artificial Intelligence, Cognitive Robotics, and Computational Creativity. Prof. Chella is the author of more than 200 scientific publications. He is a fellow of the "Accademia Nazionale di Scienze, Lettere e Arti" (the Italian national academy of science, humanities, and arts) and the recipient of the James S. Albus Medal award of the BICA Society for the outstanding scientific contribution to the science of Biologically Inspired Cognitive Architectures.

Zakaria Chihani is a researcher in the Software Safety and Security Laboratory at Commissariat à l'énergie atomique et aux énergies alternatives (CEA) in Saclay, France. His research interests include the foundations of logic and the theory and practice of formal methods. He is currently investigating the applicability of formal methods to tackle the inherent limitations of machine learning, seeking to allow harvesting the potential of AI without falling victim to its dangers, especially in the field of critical systems.

David Gamez TBD

Eric Gressier-Soudan is Professor at the Conservatoire National des Arts et Métiers (CNAM) Paris since 2003. He teaches computer networks and distributed systems. As a researcher, he is working in the field of interactive applications for museums. His research work is cross-disciplinary and mixes pervasive games, UX design, IoT and cloud computing.

Owen Holland TBD

Florent Kirchner leads the Software Safety and Security Laboratory at Commissariat à l'énergie atomique et aux énergies alternatives (CEA) in Saclay, France. He has extensive research interests in cybersecurity, software analysis, and formal verification. He leads concrete, collaborative R&D efforts pushing towards trustworthy software and systems. He holds advanced degrees in Formal Methods in Computer Science from École Polytechnique and École Normale Supérieure in France.

Micheline Lelievre is a choreographer, and is interested in all questions related to the creative process. She has been thinking about the relationship of space and perception for a long time. Her training as a dancer has been influenced by the thinking and the technique of Merce Cunningham. She enjoys sharing experiences with artists and scientists across multiple disciplines.

John Murray is a technology business consultant from Ireland, who has a research scientist appointment at San José State University, and is an early-stage venture investor in Silicon Valley, California. He recently retired from SRI International, where he was a Program Director in the Computer Science Laboratory. His research interests encompass interactive collaborative systems, machine intelligence, human cognitive engineering, and global cyber-research ethics. He is a member of the ACM Technology Policy Council in the United States.

Arianna Pipitone TBD

John Sullins TBD

Damien Williams TBD

Robin L. Zebrowski is Associate Professor of Cognitive Science, with appointments in the Psychology, Philosophy, and Computer Science programs at Beloit College in Wisconsin, USA. She works on embodied cognition as it relates to robotics, human/robot interaction, and human cognitive augmentation.