

The 1st International Workshop on Human-intELligent machIne cOexiStence (HELIOS) is a scientific event organized by the Singapore Institute for Neurotechnology (SINAPSE), in cooperation with the Office of Naval Research (ONR)-Asia, taking place on 9-10 January 2018 at the Centre for Life Sciences Auditorium, National University of Singapore.

In the context of machines increasingly relying on artificial intelligence and making their way beyond military and research contexts into consumer realm, a paradigm shift is bound to occur in the areas of robotics and autonomous systems (RAS) and human-machine interaction (HMI). Boundaries between humans and machines are dissolving and seamless coexistence within human-machine teams is envisioned. From an engineering perspective, harmonious coexistence between humans and machines requires interactivity, co-dependency and mutual reliance within a complex cognitive system. In this context, models, methods and algorithms need to be devised in order to foster, manage and maintain the complex infrastructure underlying human-machine coexistence.

The workshop is intended to cover both theoretical and experimental challenges related to human-machine coexistence, teaming in robotics and autonomous systems, trustworthiness in cyber realm and cyber-physical systems, as well as topics related to methods for modeling, simulation and optimization of human-machine interfaces.

Tuesday (9 th Jan)	
Time	Event
8:00-9:00am	Registration and Breakfast
9:00-9:15am	Opening Address by the Director of the Institute (Nitish Thakor)
9:15-9:30am	Welcome Address by the Dean of Faculty of Engineering (Chua Kee Chaing)
9:30-10:05am	Jose del R. Millan (Swiss Federal Institute of Technology in Lausanne) “Teaching Robots with a Brain-Machine Interface”
10:05-10:40am	Harold Soh (National University of Singapore) “Towards Collaborative Human-Machine Intelligent Systems”
10:40-11:15am	Hong Yan (City University of Hong Kong) “Real-Time Human Face Tracking and Facial Expression Recognition”
11:15am-12:15pm	SINAPSE Lab Visit
12:15-1:15pm	Lunch
1:15-1:50pm	Justin Dauwels (Nanyang Technological University) “Multi-modal Human Behavior Analysis”
1:50-2:25pm	Li Haizhou (National University of Singapore) “Whither Speech Recognition?”
2:25-3:00pm	Stefan Winkler (Advanced Digital Sciences Center) “Fine-grained Emotion Analysis from Facial Expressions”
3:00-3:35pm	Kay Chen Tan (City University of Hong Kong) “Applications of Evolutionary Computation and Artificial Intelligence”
3:35-3:50pm	Coffee Break
3:50-5:00pm	Round Table Panel Discussion

Wednesday (10 th Jan)	
Time	Event
9:00-9:35am	Jason Wong (Office of Naval Research Global) “Human-Machine Cognitive Compatibility: The ONR Vision”
9:35-10:10am	Hussein Abbass (University of New South Wales) “Trusted Autonomy in Closed-Loop Human-Machine Systems”
10:10-10:25am	Coffee Break
10:25-11:00am	Marcelo Ang (National University of Singapore) “Human-Robot Collaboration for Everyday Robotics”
11:00-11:35am	Gianluca Borghini (Sapienza University of Rome) “Brain Computer Interfaces for the Industrial Application of Cognitive Neuroscience”
11:35am-12:10pm	Andrei Dragomir (University of Patras) “Cognitive Assessment for Human-Machine Interaction: A Holistic Perspective”
12:10-12:30pm	Closing Remarks by the Symposium Chair (Anastasios Bezerianos)

Symposium Venue: Centre for Life Sciences Auditorium, Level 1, National University of Singapore, 28 Medical Drive, Singapore 117456 (Campus map attached below).
Register Here: <https://goo.gl/forms/eFlncjeZP9U8yTGm2>
For more information: <http://sinapse.nus.edu.sg/>

Speakers



Jose del R. Millan
Swiss Federal Institute of Technology in Lausanne (EPFL)



Harold Soh
National University of Singapore (NUS)



Hong Yan
City University of Hong Kong



Justin Dauwels
Nanyang Technological University (NTU)



Li Haizhou
National University of Singapore (NUS)



Stefan Winkler
Advanced Digital Sciences Center (ADSC)



Kay Chen Tan
City University of Hong Kong



Jason H. Wong
Office of Naval Research Global



Hussein Abbass
University of New South Wales (UNSW - Australia)



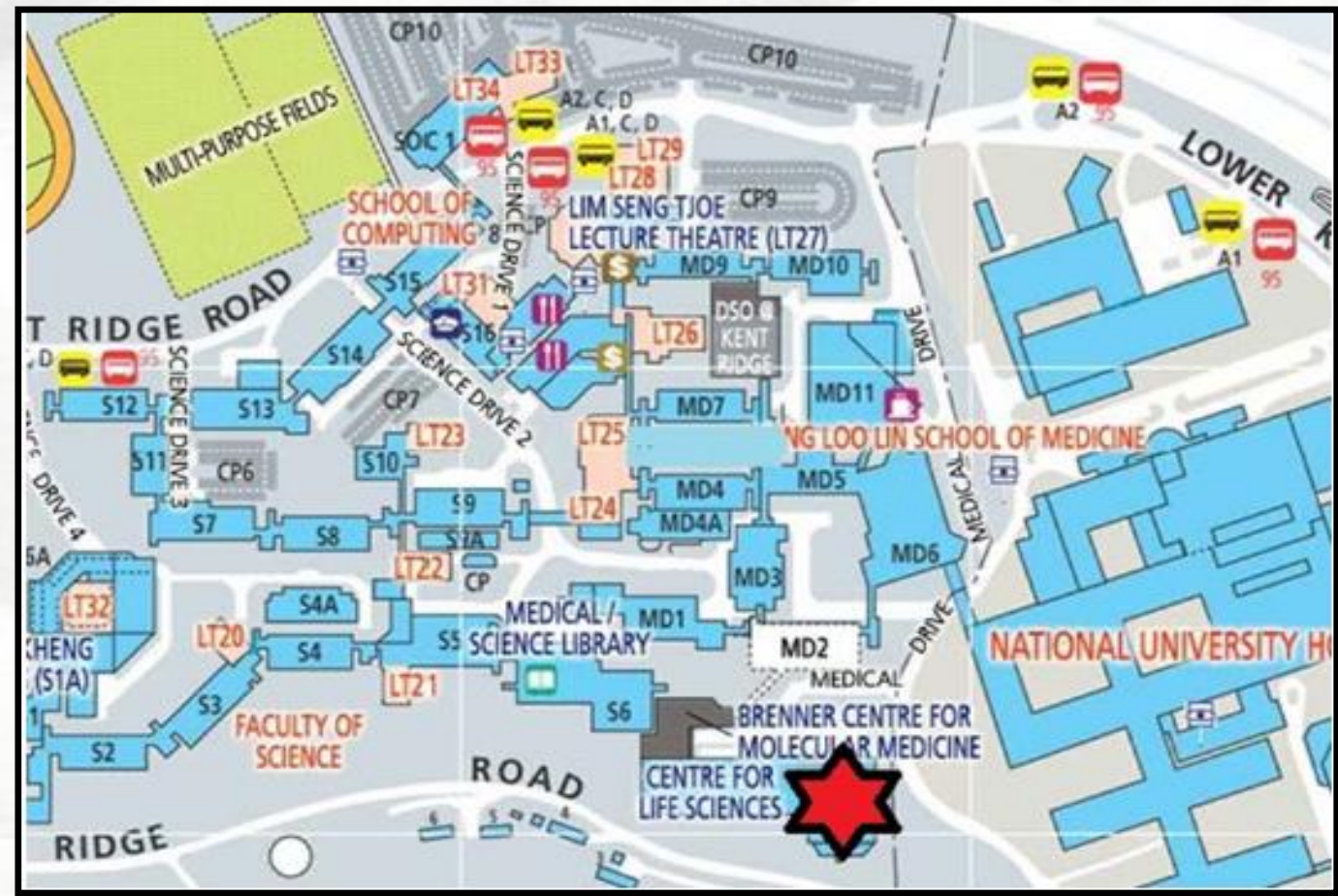
Marcelo Ang
National University of Singapore (NUS)



Gianluca Borghini
University of Rome “Sapienza”



Andrei Dragomir
University of Patras



NUS
National University of Singapore



SINAPSE
THINK BIG
think different