**Invited Speaker-1 Professor Jangmyung Lee (Pusan National University, Korea)**
**Title 1 Concurrent Localization of Multiple Unmanned Surface Vehicles Using Neural Networks**



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Jangmyung Lee, Professor, Pusan National University, was born in Kyung-nam, Korea, in 1957. He received the B.S. degree (1980) & M.S. degree (1982) in electronics engineering from Seoul National University, Korea. He also received the Ph. D. degree (1990) in EE/S from the University of Southern California, Los Angeles Since 1992, He is with the Department of Electronics Engineering, Busan National University, Busan, Korea. In the year of 2009, he founded SPENALO national robotics research center and now is the director of the center which aims at educating creative robotics engineers for industry. His research interests include Design of Robotic Control System, Factory Automation System Design, Sensor Integrated Manufacturing, and Computer Communication.

**IS-1  Concurrent Localization of Multiple Unmanned Surface Vehicles Using Neural Networks**

Jangmyung Lee (Pusan National University, Korea)

A concurrent localization of multiple USVs (Unmanned Surface Vehicle) has been proposed using neural networks in order to resolve the problems of the probability-based filters used in the existing USV localization. The multiple USVs are effective for port surveillance, ocean reconnaissance, and so on, when the concurrent localization is available. Several probability-based filters, such as, EKF, KF, and UKF have been utilized so far. Since these algorithms are externally affected by wind and waves on the sea surface, it becomes difficult to accurately control the navigation along the desired trajectory. Using the proposed neural network, the multiple USVs can be navigated to survey the under-water condition effectively



**Invited Speaker-2 Professor Henrik Hautop Lund (Technical University of Denmark, Denmark)**
**Title2-1 Body and Brain Training with Big Data and AI**
**Title2-2 Body and Brain Training with Big Data and AI 2 – A Pilot Test of Falls Prevention**
**Title2-3 Playware Ball – Initial Development Impressions of an Intelligent Ball**



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He is Professor of Department of Electrical Engineering at Technical University of Denmark. He is head of the Center for Playware, and has published more than 175 scientific papers and several patents. He has served in the Danish National Research Council. He is World Champion in RoboCup Humanoids Freestyle 2002, has developed shape-shifting modular robots, and has collaborated closely on robotics, ALife and AI with companies like LEGO,

Kompan, BandaiNamco, etc. for the past two decades. His Center for Playware at the Technical University of Denmark has a long track record of developing modular robotic playware for playful contextualized IT training in Sub-Saharan Africa, for playful rehabilitation for sport, for music, for wearable, for play, and for education. These modular playware technology developments include I-Blocks (LEGO bricks with processing power) and modular interactive tiles (larger bricks for physical rehab). Further, with the development of East-Africa's first science and business park, local entrepreneurship has been fostered amongst students graduating from the university degree programs in contextualized IT. Combining such skills, it became possible to develop technical skill enhancing football games and global connectivity based on modular playware for townships in South intelligence, soft computing, robotics, and mechatronics. He has published many papers which related to the application of Artificial Intelligence in recent years. Africa for the FIFA World Cup 2010. Lately, together with international pop star and World music promoter Peter Gabriel, he has developed the MusicTiles app as a music 2.0 experience to enhance music creativity amongst everybody, even people with no initial musical skills whatsoever, and made physical modules for Peter Gabriel's live stage performance. In all cases, professor Henrik Hautop Lund and his research center develop modular playware technology in a playful way to enhance learning and creativity amongst anybody, anywhere, anytime.

https://www.dtu.dk/english/service/phonebook/person?id=53575&tab=2&qt=dtupublicationquery

**Invited Speaker-3 Professor Luigi Pagliarini (the Academy of Fine Arts of Macerata, Italy)**
**Title3-1 PixelBeing – An Eco-sustainable Approach to Robotics and AI**
**Title3-2 Social Play with Modular Playware**

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DI BELLE ARTI
MACERATA
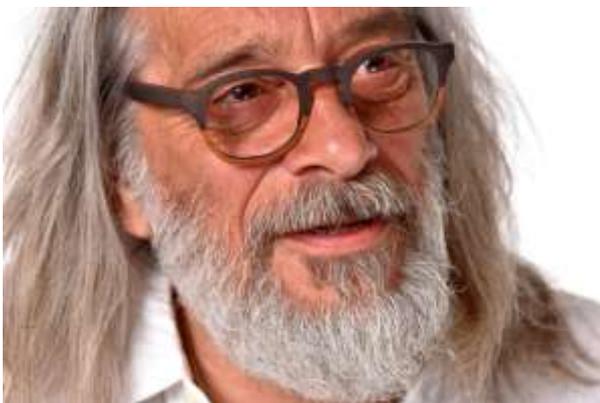
University of St. Andrews, Bachelor's degree, Experimental Psychology, 1988–1989
Università degli Studi di Pavia / University of Pavia, Doctor of Philosophy (PhD), Psychology, 1998– 2000
Università degli Studi di Roma 'La Sapienza', Master of Psychology, Psicologi sperimentale, 1984-1991

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Luigi Pagliarini, neuropsychologist by training, is an artist engaged since the early 90s in Software Art, Robot Art and AI based Art.

At the moment, he is Professor of Theory of Perception and Psychology of Form, Semantics of Bodies at the Academy of Fine Arts in Macerata, and Innovation Design at the ISIA Design Institute of Pescara. He is a Consultant Professor at the Playware of the Danish Technical University where he deals with Robots and Dynamic Agents Interfaces Design. He is also currently a Partner Consultant for Entertainment Robotics. In the past, he has collaborated on various projects with companies such as the LEGO

Group, SONY, Real World Records, etc. Among others, he was Founder and Director of the Pescara Electronic Artists Meeting; Artistic Director of Ecoteca; Curator of the Robo [art] section of the Robotsatplay Festival; Founder and Member of the International Committee of RoboCup Junior.

He is currently a member of the Editorial Committee of the "Journal of Artificial Life and Robotics", a member of the Editorial Committee of the "Journal of Art Psychology", a member of the Scientific Committee of the "Psychology-Based Technologies" International Conference and a managing member of APEXperience. He has published on books, magazines, webzines, on international congress and conference proceedings. He has received artistic and academic honors and has been awarded international prizes, more than once. He has exhibited in several museums and institutional places around the world (the Center Pompidou, ICC in Tokyo, the Science Museum of Naples, etc.). He has collaborated with various Research Bodies and Institutes and Universities (MIT Medialab in Boston, the Mechatronics Department of the Maersk Institute in Odense, the Departmento di Psicologia in Rome, St. Andrews, Naples or Milan, the Accademia di Belle Arti di Roma, Bari, etc.), both as researcher and teacher and - as consultant - with various companies, industries and multinationals. Several times, his has been featured in the media of different countries.

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