



Innovations in Intelligent Systems
and Applications Conference
6–8 October 2021, Elazig, Turkey



ASYU-2021

AlinRobotics 2021: Special Session on Intelligent Systems in Unmanned Vehicles and Robotics Applications at the 2021 Innovations in Intelligent Systems and Applications Conference (ASYU 2021)

Elazig, Turkey, October 6-8, 2021

Conference website: <http://asyu.inista.org/>

Special Session Organizer

Doç. Dr. Rıfat Hacıoğlu (Session Chair)

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Objectives and topics

Unmanned vehicles (land, air, underwater, sea surface) are technologies consisting of control and sensing systems that do not contain human elements, have the ability to decide and implement themselves, can be managed remotely or autonomously and perform predetermined tasks unless there is a necessity on them. These technologies include not only signal and image processing approaches, but also control and adaptive control approaches. The proposed special session aims to bring together researchers working in the fields of intelligent systems created by integrating machine learning, deep learning and artificial intelligence algorithms into unmanned vehicles and robotics applications, and to apply new technologies to unmanned vehicles.

The scope of the special session "Intelligent Systems in Unmanned Vehicles and Robotics Applications" includes, but is not limited to:

Unmanned vehicle technologies use sub-technologies from different disciplines and work in full harmony with each other. The following studies, in which machine learning, deep learning, and artificial intelligence algorithms are applied, are expected for this special session:

- Kinematics, Dynamics and Control: Control Systems, Logical or Sequential Control, Linear Control, Nonlinear Control, Dexterous Manipulation,
- Autonomous Systems and Semi-Autonomous Systems,
- Distributed Systems: Multi-Robot Systems, Network Robots, Robot Football,
- Sensing Systems: Sensors, Robot Perception, Vision, Tactile and Force Perception, Range Sensing, Inertia and Proprioceptive Sensing, Sensor Fusion,
- Planning and Algorithms: Action Planning, Mission Planning, Coordination, Environment and situation detection, Obstacle Finding and Crossing the Obstacle, Border Surveillance, Search and Rescue, Providing Logistic Support, Combating Asymmetric Threats,
 - Machine Learning: Artificial Intelligence, Artificial Neural Networks, Recognition and Classification, Clustering,
 - Signal Processing: Image and Sound Processing, Signal Processing,
- Manipulation: Communication Modeling, Synthesis, Force Control, Manipulation,
- Mobile Systems and Mobility: Mapping, Localization, Navigation, SLAM, Collision Avoidance, Discovery,
- Prediction and Learning Robotic Systems: Reinforcement Learning, Bayes Techniques, Graphic Models, Imitation Learning, Programming by Demonstration, Diagnostics,
- Human-Robot Interaction and Human Centered Systems: Brain-machine Interfaces, Haptics, Tele-robotics, Human Aesthetics, Auxiliary Robots, Social Robots, Safe Interaction, Robots and Art, Medical Robotics, Underwater Robotics, Aerospace Robotics, Agriculture and Mining Robotics
- Mechanisms: Design, Humanoids, Hands, Leg Systems, Snakes, Roman Actuators Reconfigurable Robots, MEMS / NEMS, Micro / Nanobots
- Electrical Control and Vehicle Electronics,
- Wired / wireless Secure Communication,
- Military Systems: Reconnaissance, Surveillance and Intelligence Systems, Weapon Systems,

Important dates

Full Paper Submission: **June 21, 2021**

Notification of Acceptance: **August 23, 2021**

Early Registration: **August 31, 2021**

Camera-Ready Submission: **September 15, 2021**

Conference date: **6-8 October, 2021**

Program Committee (to be invited)