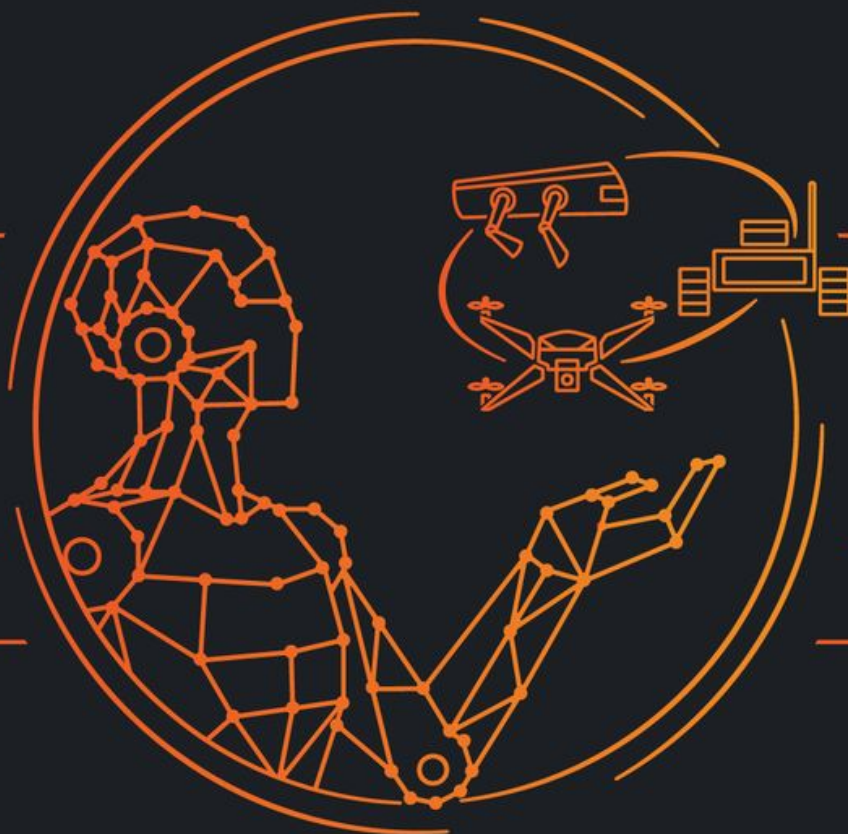


WCIT 2024



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CSIE



WORKSHOP

INNOVATIONS IN AUTONOMOUS SYSTEMS

DISCOVER ROBOTICS IN EVERY DIMENSION...



6 OCT 2024

10:00 AM - 6:00 PM | @WCIT 2024/DigiTec



KAREN DEMIRCHYAN SPORTS
AND CONCERTS COMPLEX

Welcome to the Innovations in Autonomous Systems Workshop

We invite you to join us in Yerevan, Armenia, for the "Innovations in Autonomous Systems" workshop, held as a parallel event to the prestigious World Congress on Innovation & Technology (WCIT). This workshop will bring together leading experts, researchers, and industry professionals to explore the latest advancements and future directions in autonomous systems.

The workshop will feature three comprehensive keynote sessions, each focusing on a different area of robotics:

Ground Robotics

Underwater Robotics

Aerial Robotics

These sessions will offer deep insights into the cutting-edge technologies driving innovation in each field. In addition to the keynotes, attendees will have the opportunity to engage with interactive demonstrations, explore thought-provoking poster sessions showcasing groundbreaking research, and gain a glimpse into the future of autonomous systems.



As part of WCIT, one of the world's most renowned technology conferences, this workshop will provide a unique platform for networking and collaboration with global innovators.

Be part of this exciting convergence of minds. Register today and join us in shaping the future of autonomy!

Invited Speakers



António Pascoal

Professor, University of
Lisbon, Founder
of DSORLab of ISR



Reza Ghabcheloo

Professor,
Tampere University



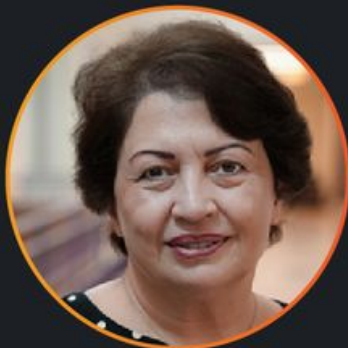
Pu Li

Chair Professor, Head of
the Process Optimization
Group, Ilmenau University
of Technology



Eric Feron

Professor, Director of
the RISC Laboratory, King
Abdullah University of
Science and Technology



Naira Hovakimyan

Professor, University of
Illinois Urbana- Champaign,
Director of AVIATE Center



Isaac Kaminer

Professor,
Naval Postgraduate School



Gregory Chirikjian

Professor, Chair of
Mechanical Engineering,
University of Delaware



Nina Mahmoudian

Profesor,
Purdue University

Prof. Naira Hovakimyan (Oct. 6) and Prof. Eric Feron (Oct. 7) will also be delivering keynote speeches on the WCIT 2024 Main Stage. Be sure to catch these world-renowned experts sharing their groundbreaking insights!

Program

Our workshop offers a rich and diverse program featuring keynote sessions, spotlight talks, live demonstrations, and poster presentations.

Keynote Sessions

The keynote sessions are structured around three distinct themes that represent the cutting-edge of autonomous technology:

- **The Rise of Autonomy (Ground Robotics):** Delve into the advancements in ground robotics, including self-driving cars and terrestrial robots. This theme symbolizes the growing presence of robotics in our daily lives and the profound impact these technologies will have on transportation, industry, and society.
- **Deep Blue Autonomy (Underwater Robotics):** Explore the uncharted depths of underwater robotics, where the challenges of communication, navigation, and exploration push the boundaries of technology. This theme reflects our commitment to advancing technologies that can operate in the most remote and harsh environments on Earth.
- **Wings of Tomorrow (Aerial Robotics):** Discover the innovations driving the future of aerial robotics, including drones and autonomous aircraft. This theme captures the vision of a sky where autonomous systems play a crucial role in everything from logistics to environmental monitoring.

Each theme was chosen to highlight the diverse applications and future potential of autonomous systems across different environments. Our speakers will provide deep insights into the current state and future directions of these exciting fields.



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Spotlight Talks

Selected research from the poster sessions will be highlighted in short, focused spotlight talks. These presentations will offer quick yet deep dives into the key findings and innovations being discussed.

Demonstrations

Experience a wide range of live demonstrations showcasing real-world applications of autonomous systems, from drones to self-driving cars. These demos, presented by CSIE students, will provide a hands-on look at cutting-edge technologies in action.

Poster Sessions

Engage with researchers during our poster sessions, which will cover a broad spectrum of topics within autonomous systems. This is a valuable opportunity to explore specific areas of research in depth and to network with peers in the field.



Workshop Agenda

| Time | Main Sessions (Zeno Hall) | Demo preparations |
|---------------------------------|---|--------------------------|
| 10:00AM-10:10AM | Opening Remarks | |
| Session 1: Wings of Tomorrow | | |
| 10:10AM-10:50AM | Naira Hovakimyan: Safe Learning in Autonomous Systems | |
| 10:50AM-11:30AM | Isaac Kaminer: Defense against Adversarial Swarm Systems with Parameter Uncertainty | Demonstrations (Hallway) |
| 11:30AM-11:55AM | Break & Spotlight Talks I | |
| Session 2: Deep Blue Autonomy | | |
| 11:55AM-12:35PM | António M. Pascoal: Exploring the Blue Frontier with Cooperative Marine Robots | |
| 12:35PM-1:15PM | Nina Mahmoudian: Navigating the Future: Advancements in Autonomous Marine Systems | |
| 1:15PM-2:15PM | Lunch Break & Poster Session | |
| Session 3: The Rise of Autonomy | | |
| 2:15PM-2:55PM | Gregory Chirikjian: From State Estimation on Lie Groups to Robot Imagination | |
| 2:55PM-3:35PM | Eric Feron: Experiments in Robotics and Autonomy | |
| 3:35PM-4:05PM | Break & Spotlight Talks II | |
| 4:05PM-4:45PM | Reza Ghabcheloo: Reinforcement Learning for real-world heavy-duty robots | |
| 4:45PM-5:25PM | Pu Li: Realization of Autonomous Driving for a Delivery Robot on Sidewalks | |
| 5:25PM-5:30PM | Closing Remarks | |

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