

Session VI

ROBOTICS & CYBERNETICS

Committee: **Prof. Ing. Ivan Sekaj, PhD. – chairperson**
Ing. Ľuboš Chovanec, PhD.
Ing. Martin Dodek, PhD.

8:30 - 11:30

1. Robustness against dynamic system changes using neurocontroller

Jaromír Skirkanič and Ivan Sekaj

2. Implementation of offset-free Model Predictive Control for a laboratory motion system"

Róbert Málík, Kristína Okienková, Marián Tárník and Jana Paulusová

3. Communication protocols across internet in robotic systems

Martin Lukáč, Leo Mrafko, Jakub Ivan and Tomáš Jurov

4. Benchmarking reinforcement learning algorithms (PPO, TD3, SAC, DDPG) on humanoid locomotion in NVIDIA Isaac Lab

Aleš Melichar, Danil Zlobin and Ivan Sekaj

5. Gradient-like heuristic for neuroevolution

Danil Zlobin, Aleš Melichar and Ivan Sekaj

6. Graph-based simultaneous localization and mapping under uncertain landmark correspondence"

Tomáš Jurov and Patrik A. Knaperek

7. Offset-free Model Predictive Control of the Van de Vusse reaction

Kristína Okienková, Gabriele Pannocchia, Marco Vaccari, Riccardo Bacci di Capaci, Róbert Málík, Martin Dodek, Jana Paulusová, Marián Tárník

8. *Unconditional GAN-based generation of stage-specific fundus images for augmenting diabetic retinopathy screening*

Michal Kováč, Jarmila Pavlovičová

9. *Benchmarking neuroevolution and Deep RL on a bipedal walker*

Oliver Halaš and Ivan Sekaj

10. *Automated coronary calcium scoring using Dual-Input W-Net: a preliminary investigation*

Ondrej Straka, Manuel Pérez-Pelegri, Víctor Marcos-Garcés,
David Moratal

11. *A survey of sensor and illumination technologies of time-of-flight cameras*

Michal Lúčny

14:00

Award Ceremony (AB-150)