Giorgio Nicola

Curriculum Vitae

Personal information:

Education

- 2022: Phd in Information Engineering at University of Padova, Thesis Title: Human-Aware Task and Motion Planning Through Deep Reinforcement Learning; Supervisor: Stefano Ghidoni
- 2020: Visiting student at University of Darmstadt under supervision of Prof. Jan Peters
- 2019: Summer school on Advances on Artificial Intelligence at Lake Como School of Advanced Studies
- 2016: Master of Science in Mechanical Engineering: Mechatronics and Robotics at Polytechnic of Milan (100/110)
- 2015: Athens Programme single course title: Introduction to Biomechanics
- 2014: Bachelor of Science in Mechanical Engineering at Polytechnic of Milan (95/110)
- 2010: High School Diploma at Liceo Scientifico Aristotele, Roma (82/100)
- 2009: Summer Term at University of Pennsylvania course title: Experimental Physics

Work Experience

- 2021-Present: Junior Research Fellowship at STIIMA-CNR
- 2017-2018: Junior Research Fellowship at ITIA-CNR
- 2016-2017: Internship at Telematic Solution s.r.l.

Publications

- **Journals**
  - Towards optimal task positioning in multi-robot cells, using nested meta-heuristic swarm algorithms; S. Mutti, G. Nicola, M. Beschi, N. Pedrocchi, LM Tosatti; Robotics and Computer-Integrated Manufacturing 71, 102131 (2021)
  - Optimal Robot Motion Planning of Redundant Robots in Machining and Additive Manufacturing Applications; M Beschi, S Mutti, G Nicola, M Faroni, P Magnoni, E Villagrossi, Nicola Pedrocchi; Electronics 8 (12), 1437 (2019)

- **Conferences**
  - Deep Reinforcement Learning for Motion Planning in Human Robot cooperative Scenarios; G.Nicola, S.Ghidoni; 26th IEEE International Conference on Emerging Technologies and Factory Automation (ETFA) (2021)
  - Robotic object sorting via deep reinforcement learning: a generalized approach; G. Nicola, L. Tagliapietra, E. Tosello, N. Navarin, S. Ghidoni, E. Menegatti; 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN) (2021)
  - Robot Task Planning via Deep Reinforcement Learning: a Tabletop Object Sorting Application; F. Ceola, E. Tosello, L. Tagliapietra, G. Nicola, S. Ghidoni; IEEE SMC2019 (2019)
  - Optimal task positioning in multi-robot cells, using nested meta-heuristic swarm algorithms; G Nicola, N Pedrocchi, S Mutti, P Magnoni, M Beschi; CIRP Procedia 72, 386-391 (2018)

Didactic Activities

- 2019: Assistance to laboratory activity for the course "Laboratorio di Progammazione" at University of Padova

Computer skills:

- Programming languages: Matlab/Simulink, C++, Python, CUDA
- ROS (Robot Operating Systems)
- Microsoft Office suite
- 3D CAD design (Solidworks, Autodesk Inventor)

Lingue:

- ITALIAN: Lingua madre
- ENGLISH: Scritto: Ottimo - Parlato: ottimo (certificazione CAE C1)

Research Projects

- DrapeBot (2020-2024) - Collaborative draping of carbon fiber parts https://www.drapebot.eu/
- Made4Lo (2017-2020) - Robotic path planning and optimization for dual arm additive manufacturing applications https://www.openinnovation.regione.lombardia.it/it/b/1539/progetto-made4lo

Code Repositories

- RL_Gazebo: Library to develop reinforcement learning environment based on Gazebo physics simulator and ROS https://github.com/giorgionicola/rl_gazebo
- itia_WACOCuda: Package to https://github.com/CNR-STIIMA-IRAS/WACO

Other

- Conseguimento Esame di Stato di Ingegneria industriale