Damjan Miklić, ph.d.

Contact Information

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Public Profiles

ResearchGate, LinkedIn, Google Scholar, GitHub

Research Interests

Autonomous navigation, multi-robot coordination, robotic manipulation, human-robot interaction, modeling and simulation, software engineering for robot control, collective and bio-hybrid systems.

Education

University of Zagreb, Zagreb, Croatia

Doctor of Philosophy — February 2006 – May 2013

- Advisor: Professor Stjepan Bogdan
- Dissertation title: Grid-based coordinated control of mobile robot formations

University of Zagreb, Zagreb, Croatia

Graduate Engineer, Electrical Engineering — September 1998 – May 2005

- Study program: Control Engineering and Automation

Professional Experience (past 10 years)

University of Modena and Reggio Emilia, Reggio Emilia, Italy

Postdoctoral Researcher — July 2017 – present

University of Zagreb, Zagreb, Croatia

Postdoctoral Researcher and Teaching Assistant — June 2013 – June 2017

University of Zagreb, Zagreb, Croatia

Research and Teaching Assistant — June 2007 – May 2013

University of New Mexico, Albuquerque, NM, USA

Visiting Researcher — August 2008 – July 2009

Neos d.o.o., Zagreb, Croatia

Software Developer — October 2007 – May 2009

Projects (past 5 years)

Control of industrial vehicles funded by System Logistics S.p.A. — July 2017 – present
Research scientist - Design, implementation and experimental validation of advanced estimation and control methods for high-precision navigation of industrial transportation vehicles.

AMaCal PoC funded by HAMAG-BICRO — July 2016 – June 2017
Principal investigator - Development of an automated map calibration procedure for autonomous material-handling applications.

ADORE funded by HRZZ — September 2014 – August 2018
Project associate - Research on human-robot interaction in the context of autism diagnostics.

ASSISIbf funded by FP7-FOCAS — February 2013 – February 2018
Project associate - Coordination and development of a modular software framework for conducting bio-hybrid experiments on social insects.

EC-SAFEMOBIL, funded by FP7-ICT — July 2011 – July 2015
Project associate - Development of high-precision localization and multi-robot coordination methods for industrial applications.

Selected Publications

[1] K. Griparić, T. Haus, D. Miklić, M. Polić, and S. Bogdan, "A robotic system for researching social integration in honeybees," *PLOS ONE*, vol. 12, no. 8, p. e0181977, aug 2017. [Online]. Available: https://doi.org/10.1371/journal.pone.0181977

[2] G. Vasiljević, D. Miklić, I. Draganjac, Z. Kovačić, and P. Lista, "High-accuracy vehicle localization for autonomous warehousing," *Robotics and Computer-Integrated Manufacturing*, vol. 42, pp. 1–16, 2016.

[3] I. Draganjac, D. Miklić, Z. Kovačić, G. Vasiljević, and S. Bogdan, "Decentralized control of multi-agv systems in autonomous warehousing applications," *IEEE Transactions on Automation Science and Engineering*, vol. 13, no. 4, pp. 1433–1447, 2016.

[4] F. Petric, D. Tolić, D. Miklić, Z. Kovačić, M. Cepanec, and S. Šimleša, "Towards a robot-assisted autism diagnostic protocol: Modelling and assessment with pomdp," in *International Conference on Intelligent Robotics and Applications*. Springer International Publishing, 2015, pp. 82–94.

[5] D. Miklic, S. Bogdan, R. Fierro, and Y. Song, "A grid-based approach to formation reconfiguration for robots with non-holonomic constraints," *European Journal of Control*, vol. 18, no. 2, pp. 162–181, 2012.

Grants and Awards

Fulbright Visiting researcher at the Department of Electrical and Computer Engineering, University of New Mexico, USA, August 2008 – June 2009

DAAD student internship at the IFAK Institut für Automation und Kommunikation, Magdeburg, Germany, November 2004 – May 2005

"Josip Lončar Award" granted by the Faculty Council of the Faculty of Electrical Engineering and Computing, for outstanding academic achievement in academic year 2001/2002

Teaching Activities

University of Zagreb, Faculty of Electrical Engineering and Computing, *Lecturer in charge* Programming for the Robot Operating System (2015 – present), *Teaching assistant* for the following courses: Fundamentals of robotics, Robotics practicum, Servo systems, Control of robotic systems , Elements of process automation, Fundamentals of intelligent control systems (2007 – 2017), *ECTS coordinator* for the field of Automation (2015 – 2016)

Workgroup leader at the 2010 NATO ASI conference on Advanced All-Terrain Autonomous Systems. Workgroup topic: Modeling and simulation of multi-agent systems.

Science Popularization

Robotics Workshop at Višnjan Youth Science Camp, 2013, August 13 – 20

Conference and Workshop Organization

2017 Breaking the Surface 9th International Interdisciplinary Field Workshop on Marine Robotics and Applications, Program Committee member

Programming skills

C, C++, Python, ROS, Matlab, Simulink, LaTeX 2$_\varepsilon$, Linux.

Professional Affiliations

IEEE, IEEE RAS

Review Activities

Journals: IEEE Transactions on Automation Science and Engineering, MDPI Sensors, MDPI Robotics, Journal of Intelligent and Robotic Systems, Systems & Control Letters
Conferences: ICRA, IROS, ECC, MSC, MED
Projects: Croatian Ministry of Science and Education

Spoken Languages

Croatian, English (C2), German (C1), Italian (B2), French (B2), Spanish (B1)

References (Contacts available on request)

Stjepan Bogdan
Professor
University of Zagreb
Zagreb, Croatia

Cesare Fantuzzi
Professor
University of Modena and Reggio Emilia
Reggio Emilia, Italy

Francesco Mondada
Adjunct Professor
EPFL
Lausanne, Switzerland

Rafael Fierro
Professor
University of New Mexico
Albuquerque, NM, USA