Piotr Trojanek, PhD
Department of Computer Science
Faculty of Engineering
University of Bristol, United Kingdom

Born: 1982, Poland
Nationality: Polish

Curriculum Vitae

Education

Academic Record

10.2006–10.2012	• Ph.D. studies at Robot Control and Recognition Systems Team, Institute of Control and Computation Engineering, Warsaw University of Technology. Thesis title: *Design and implementation of robot control systems reacting to asynchronous events.*
10.2001–07.2006	• M.Sc. in Computer Science from Warsaw University of Technology. Thesis title: *Environment for mobile robots programming with the Player/Stage software.* Completed with distinction.

Experience

Employment Record

01.2013–	**University of Bristol** Research Assistant at Department of Computer Science and Bristol Robotics Laboratory (Verification & validation research theme)
04.2009–01.2012	**Warsaw University of Technology** Software developer at Institute of Control and Computation Engineering
10.2005–07.2006	• **Warsaw University of Technology** Assistant (laboratory classes and student's projects supervising)
04.2002–09.2006	• **Elproma Electronics**, Poland Core developer of embedded devices for network time synchronization

Education Grants and Scholarships

Grants from Engineering and Physical Sciences Research Council (EPSRC), United Kingdom

01.2013–01.2018	• *RIVERAS: Robust Integrated Verification of Autonomous Systems*, investigator

Grants from European Union

10.2008–01.2012	• *SwarmItFIX: Self Reconfigurable Intelligent Swarm Fixtures*, The Seventh Framework Programme, FP7-214678, investigator

Grants from National Science Centre (Poland)

12.2011–12.2012	• *Design and specification of multi-robot control systems*, principal investigator, manager

Cooperation with the industry

03.2009–12.2009	• *Autonomous navigation towards an inspection area by a mobile robot*, Industrial Research Institute for Automation and Measurements, investigator

Grants from Ministry of Science and Higher Education (Poland)

10.2007–10.2010	• *Poblems of active sensing, interpretation of sensor data and manipulation in service robots*, Warsaw University of Technology, investigator
12.2005–12.2008	• *Cooperation of intelligent autonomous devices*, University of Podlasie, Siedlce, investigator
10.2005–04.2008	• *Methods of aiding humans in their daily life and in extraordinary situations by mobile robots*, Warsaw University of Technology, investigator

Grants from Dean of the Faculty of Electronics and Information Technology

09.2012–12.2012	• *Tools supporting the development process of 3D perception systems*, investigator
09.2011–12.2011	• *MRROC++ robot programming framework executed on Linux operating system with a new force sensors software*, investigator

Grants from PhD Student Council of Warsaw University of Technology

06.2008–12.2008	• *"Bionikalia" – robotics competition (event organization)*, manager
10.2007–04.2008	• *Sumo robot fighter*, manager
06.2007–12.2007	• *Robocup and promotion of robotics*, manager

Grants from Rector of the Warsaw University of Technology

05.2008–12.2008	• *Internet control of mobile surveillance robot*, participant
05.2007–12.2007	• *Advancement of four-legged walking robot*, participant
05.2006–12.2006	• *Design and control of four-legged walking robot*, participant
05.2005–12.2005	• *Control of miniature mobile robots team*, investigator
05.2004–12.2004	• *Control of mobile soccer robots team*, investigator

Scholarships

03.2009–03.2011	• *Outstanding PhD student scholarship* Centre of Advances Studies, Warsaw University of Technology

Teaching Experience

03.2009–07.2010	*Mobile Robots*, laboratory classes, supervision of projects; course of European Master on Advanced RObotics
10.2005–07.2010	*Introduction to robotics* – laboratory classes, supervision of projects
03.2006–07.2007	*Intelligent robotics systems* – supervision of projects
10.2006–07.2007	*Real-time operating systems* – supervision of projects
10.2005–07.2006	*Security of networks and systems* – laboratory classes

Courses and research visits

07.2012	4th BRICS research camp on Robot Software Architectures, Bergamo, Italy
10.2011, 04.2010	research visits at Guidance, Control, and Decision Systems Laboratory, Department of Aerospace Engineering, Indian Institute of Science, Bangalore, India
08.2008	Summer School on Monitoring and Coordination Across Networked Autonomous Entities, Bad Münster am Stein-Ebernburg, Germany

Other

10.2014	SIMPAR 2014: Simulation, Modeling, and Programming for Autonomous Robots, Bergamo, Italy, member of the international program committee
11.2012	SIMPAR 2012: Simulation, Modeling, and Programming for Autonomous Robots, Tsukuba, Yapan, member of the international program committee

Bibliography

[1]   C. Zieliński, W. Kasprzak, T. Kornuta, W. Szynkiewicz, P. Trojanek, M. Walęcki, T. Winiarski, and T. Zielińska, "Control and programming of a multi-robot-based reconfigurable fixture," *Industrial Robot: An International Journal*, vol. 40, no. 4, pp. 329–336, 2013.

[2]   P. Trojanek and K. Eder, "Verification and testing of mobile robot navigation algorithms: A case study in SPARK," in *IEEE/RSJ International Conference on Intelligent Robots and Systems*, IEEE, September 2014. Accepted for publication.

[3]   P. Trojanek, "Model-driven engineering approach to design and implementation of robot control system," *2nd International Workshop on Domain-Specific Languages and models for ROBotic systems (DSLRob'11)*, September 2011.

[4]   C. Zieliński and P. Trojanek, "Stigmergic cooperation of autonomous robots," *Journal of Mechanism and Machine Theory*, vol. 44, pp. 656–670, April 2009.

[5]   C. Zieliński, T. Kornuta, P. Trojanek, T. Winiarski, and M. Walęcki, "Specification of a multi-agent robot-based reconfigurable fixture control system," *Robot Motion & Control 2011 (Lecture Notes in Control & Information Sciences)*, vol. 422, pp. 171–182, 2012.

[6]   C. Zieliński, T. Winiarski, P. Trojanek, and T. Kornuta, "Multi-agent control system specification of a robot based reconfigurable fixture," in *Problems in Robotics* (K. Tchoń and C. Zieliński, eds.), vol. 2, pp. 691–702, Publishing House of Warsaw University of Technology, 2010.

[7]   P. Trojanek and C. Zieliński, "A method of integrating robot programming frameworks," in *17th CISM-IFToMM Symposium on Robot Design, Dynamics, and Control (RoManSy'08)*, July 2008.

[8]   P. Trojanek, C. Zieliński, and W. Szynkiewicz, "Definition and composition of individual robot behaviours in cooperative box pushing," in *Proceedings of the 13th IEEE IFAC International Conference on Methods and Models in Automation and Robotics (on CD)*, Technical University of Szczecin, 29–30 August 2007.

[9]   M. Olszewski, B. Siemiątkowska, R. Chojecki, P. Marcinkiewicz, P. Trojanek, and M. Majchrowski, "Mobile robot localization using laser range scanner and omni-camera," in *CISM Courses and Lectures - 16th CISM–IFToMM Symposium on Robot Design, Dynamics and Control, RoManSy'06* (T. Zielińska and C. Zieliński, eds.), no. 487, (Wien, New York), pp. 229–236, Springer, June 20–24 2006.

[10]   P. Trojanek and C. Zieliński, "Design method and tools supporting implementation of robot control systems," in *Real-time systems 2012*, (Cracow, Poland), September 2012.

[11]   P. Trojanek and C. Zieliński, "Decomposition and specification of robot control systems (in Polish)," in *Design, analysis and implementation of real-time systems* (L. Trybus and S. Samolej, eds.), pp. 53–64, Transport and Communication Publishers, 2011.

[12]   P. Trojanek and C. Zieliński, "Specification of multi-robot control system based on Petri nets (in Polish)," in *Design methods and applications of real-time systems* (L. Trybus and S. Samolej, eds.), pp. 47–57, Transport and Communication Publishers, 2010.

[13]   P. Trojanek and C. Zieliński, "Specification of complex robot control systems (in Polish)," *Measurements–Automatics–Robotics (PAR)*, no. 2, pp. 266–274, 2011.

[14]   P. Trojanek, "Direct communication mechanisms in robot programming frameworks (in Polish)," in *X National Conference on Robotics - Problems in Robotics* (K. Tchoń and C. Zieliński, eds.), vol. 2, pp. 369–378, Publishing House of Warsaw University of Technology, 2008.

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[15]   C. Zieliński, T. Kornuta, P. Trojanek, and T. Winiarski, "Design method for control systems of autonomous mobile robots (in Polish)," *Measurements–Automatics–Robotics (PAR)*, no. 9, 10, pp. 84–87, 84–91, 2011.

[16]   C. Zieliński and P. Trojanek, "Cooperation of robots," in *Intelligence around us. Interaction of software agents, robots, intelligent devices (in Polish)* (S. Ambroszkiewicz, A. Borkowski, K. Cetnarowicz, and C. Zieliński, eds.), pp. 301–315, Monographs of the Committee for Automation and Robotics of Polish Academy of Sciences, EXIT, 2010.

[17]   R. Chojecki, M. Olszewski, W. Szynkiewicz, and P. Trojanek, "Laboratory mobile robot robot Electron – applications (in Polish)," *Conference on Automation – Innovations and Future Prospectives. Pomiary Automatyka Robotyka*, Warsaw, 2007.

[18]   W. Szynkiewicz, R. Chojecki, A. Rydzewski, M. Majchrowski, and P. Trojanek, "Modular mobile robot – Elektron (in Polish)," in *Advances in Robotics: Control, Perception and Communication* (K. Tchoń, ed.), pp. 265–274, Transport and Communication Publishers, Warsaw, 2006.

[19]   C. Zieliński, W. Szynkiewicz, P. Trojanek, and M. Majchrowski, "Control of a team of heterogeneous robots: Example of cooperative box pushing (in Polish)," in *9-th National Conference on Robotics – Advances in Robotics: Robot Systems and Cooperation* (K. Tchoń, ed.), vol. 2, pp. 299–308, Transport and Communication Publishers, Warsaw, 2006.

[20]   M. Majchrowski, P. Trojanek, and W. Szynkiewicz, "Mobile robot control in application to RoboCup league (in Polish)," in *8-th National Conference on Robotics – Advances in Robotics: Industrial and Medical Robotics Systems* (K. Tchoń, ed.), vol. 2, pp. 233–242, Transport and Communication Publishers, Warsaw, 2005.

[21]   A. Karbowski, M. Majchrowski, and P. Trojanek, "jParalize – a simple, free and lightweight tool for parallelizing Matlab calculations on multicores and in clusters." Minisymposium on HPC Software: Tools, Libraries and Frameworks, PARA 2008: 9th International Workshop on State-of-the-Art in Scientific and Parallel Computing. NTNU, Trondheim, Norway, May 13-16 2008.