

Articles in Impacted Journals

- [1] T. Krajník, M. Nitsche, J. Faigl, P. Vaněk, M. Saska, T. Duckett, L. Přebil, and M. Mejail. A practical multirobot localization system. *Journal of Intelligent & Robotic Systems*. (accepted, to appear).
- [2] A. Vázquez-Otero, J. Faigl, N. Duro, and R. Dormido. Reaction-diffusion based computational model for autonomous mobile robot exploration of unknown environments. *International Journal of Unconventional Computing*. (accepted, to appear).
- [3] J. Faigl, V. Vonásek, and L. Přebil. Visiting convex regions in a polygonal map. *Robotics and Autonomous Systems*, 61(10):1070–1083, 2013.
- [4] D. Fišer, J. Faigl, and M. Kulich. Growing neural gas efficiently. *Neurocomputing*, 104:72–82, 2013.
- [5] M. Kulich, J. Chudoba, K. Košnar, T. Krajník, J. Faigl, and L. Přebil. SyRoTek - Distance Teaching of Mobile Robotics. *IEEE Transactions on Education*, 56(1):18–23, 2013.
- [6] J. Faigl. On the performance of self-organizing maps for the non-Euclidean Traveling Salesman Problem in the polygonal domain. *Information Sciences*, 181:4214–4229, October 2011.
- [7] J. Faigl and L. Přebil. Inspection planning in the polygonal domain by Self-Organizing Map. *Applied Soft Computing*, 11(8):5028–5041, 2011.
- [8] J. Faigl, M. Kulich, and L. Přebil. A Sensor Placement Algorithm for a Mobile Robot Inspection Planning. *Journal of Intelligent & Robotic Systems*, 62(3):329–353, 2011.
- [9] J. Faigl, M. Kulich, V. Vonásek, and L. Přebil. An Application of Self-Organizing Map in the non-Euclidean Traveling Salesman Problem. *Neurocomputing*, 74:671–679, 2011.
- [10] J. Faigl. Approximate Solution of the Multiple Watchman Routes Problem With Restricted Visibility Range. *IEEE Transactions on Neural Networks*, 21(10):1668–1679, 2010.
- [11] T. Krajník, J. Faigl, V. Vonásek, K. Košnar, M. Kulich, and L. Přebil. Simple, Yet Stable Bearing-Only Navigation. *Journal of Field Robotics*, 27(5):511–533, September 2010.

Articles in Peer-Reviewed Journals

- [12] J. Faigl, J. Chudoba, K. Košnar, M. Saska, M. Kulich, and L. Přebil. SyRoTek - A Robotic System for Education. *AT&P journal PLUS 2*, pages 31–36, October 2010.
- [13] J. Faigl, T. Krajník, K. Košnar, H. Szücssová, J. Chudoba, V. Grimmer, and L. Přebil. Mobile Robotics at FEE CTU. *AT&P journal PLUS 2*, pages 37–42, October 2010.
- [14] T. Krajník, J. Faigl, V. Vonásek, H. Szücssová, O. Fišer, and L. Přebil. A Monocular Navigation System for RoboTour Competition. *AT&P journal PLUS 2*, pages 57–63, October 2010.

Conference Papers

- [15] J. Faigl and G. Hollinger. Self-organizing map for the prize-collecting traveling salesman problem. In *10th Workshop on Self-Organizing Maps*, 2014. (to appear).
- [16] J. Faigl, P. Vaněk, and M. Kulich. Self-organizing map for determination of goal candidates in mobile robot exploration. In *22th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN)*, 2014. (to appear).
- [17] J. Faigl and M. Kulich. On determination of goal candidates in frontier-based multi-robot exploration. In *Proceedings of 6th European Conference on Mobile Robots*, pages 210–215, Barcelona, 2013.

- [18] J. Faigl, T. Krajník, J. Chudoba, L. Přeučil, and M. Saska. Low-cost embedded system for relative localization in robotic swarms. In *IEEE Int. Conf. on Robotics and Automation (ICRA)*, pages 985–990, 2013.
- [19] P. Janoušek and J. Faigl. Speeding up coverage queries in 3d multi-goal path planning. In *IEEE Int. Conf. on Robotics and Automation (ICRA)*, pages 5067–5072, 2013.
- [20] M. Cap, P. Novak, M. Selecky, J. Faigl, and J. Vokrinek. Asynchronous decentralized prioritized planning for coordination in multi-robot system. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 3822–3829, 2013.
- [21] T. Krajník, M. Nitsche, J. Faigl, T. Duckett, M. Mejail, and L. Přeučil. External localization system for mobile robotics. In *Proceedings of 16th International Conference on Advanced Robotics (ICAR)*, pages 1–6, 2013.
- [22] A. Vázquez-Otero, J. Faigl, N. Duro, and R. Dormido. Reaction-diffusion process based computational model for mobile robot exploration task. In *Workshop Proceedings on Unconventional Approaches to Robotics, Automation and Control Inspired by Nature, held in conjunction with ICRA*, pages 16–18, 2013.
- [23] T. Krajník, P. Cristóforis, J. Faigl, H. Szücssová, M. Nitsche, L. Přeučil, and M. Mejail. Image features for long-term mobile robot autonomy. In *Workshop Proceedings on Long-Term Autonomy, held in conjunction with ICRA, 2013*. <https://sites.google.com/site/icra2013ltaworkshop/presenters#TOC-Image-Features-for-Long-Term-Mobile-Robot-Autonomy>.
- [24] J. Vokrinek, P. Janovsky, J. Faigl, P. Benda, F. Tango, and D. Pinotti. A cooperative driver model for traffic simulations. In *11th IEEE International Conference on Industrial Informatics (INDIN)*, pages 756–761, 2013.
- [25] J. Faigl, M. Kulich, and L. Přeučil. Goal assignment using distance cost in multi-robot exploration. In *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pages 3741–3746, 2012.
- [26] A. Vázquez-Otero, J. Faigl, and A. P. Muñozuri. Path planning based on reaction-diffusion process. In *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pages 896–901, 2012.
- [27] M. Saska, T. Krajník, J. Faigl, V. Vonásek, and L. Přeučil. Low cost mav platform ar-drone in experimental verifications of methods for vision based autonomous navigation. In *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pages 4808–4809, 2012.
- [28] J. Faigl, T. Krajník, V. Vonásek, and L. Přeučil. On Localization Uncertainty in an Autonomous Inspection. In *IEEE Int. Conf. on Robotics and Automation (ICRA)*, pages 1119–1124, 2012.
- [29] J. Faigl, T. Krajník, and L. Přeučil. Advanced Methods for UAV Autonomy. In *Sborník příspěvků z mezinárodní konference bezpilotní letouny v bezpečnostní praxi*, pages 19–28, 2012.
- [30] J. Faigl, V. Vonásek, and L. Přeučil. A Multi-Goal Path Planning for Goal Regions in the Polygonal Domain. In *Proceedings of the 5th European Conference on Mobile Robots*, pages 171–176, Örebro, 2011. AASS Research Centre.
- [31] M. Kulich, J. Faigl, and L. Přeučil. On distance utility in the exploration task. In *IEEE Int. Conf. on Robotics and Automation (ICRA)*, pages 4455–4460, 2011.
- [32] V. Vonásek, J. Faigl, T. Krajník, and L. Přeučil. A Sampling Schema for Rapidly Exploring Random Trees Using a Guiding Path. In *Proceedings of the 5th European Conference on Mobile Robots*, pages 201–206, Örebro, 2011. AASS Research Centre.
- [33] J. Faigl and L. Přeučil. Self-Organizing Map for the Multi-Goal Path Planning with Polygonal Goals. In *International Conference on Artificial Neural Networks (ICANN)*, pages 85–92, Heidelberg, 2011. Springer.
- [34] J. Faigl and J. Mačák. Multi-Goal Path Planning Using Self-Organizing Map with Navigation Functions. In *19th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN)*, pages 41–46, Louvain la Neuve, 2011. Ciaco - i6doc.com.

- [35] J. Chudoba, J. Faigl, M. Kulich, T. Krajník, K. Košnar, and L. Přeučil. A technical solution of a robotic e-learning system in the syrotek project. In *3rd International Conference on Computer Supported Education*, volume 1, pages 412–417. INSTICC Press, May 2011.
- [36] T. Krajník, V. Vonásek, D. Fišer, and J. Faigl. AR Drone as a Platform for Robotic Research and Education. In *Research and Education in Robotics: EUROBOT 2011*, pages 172–186, Heidelberg, 2011. Springer.
- [37] J. Faigl, T. Krajník, V. Vonásek, and L. Přeučil. Surveillance Planning with Localization Uncertainty for UAVs. In *3rd Israeli Conference on Robotics,,* Ariel, 2010. Ariel University Center.
- [38] M. Kulich, J. Faigl, J. Chudoba, and K. Košnar. A Visualization System for Teaching Intelligent Mobile Robotics in SyRoTek. In *Proceedings of International Conference on Simulation, Modeling and Programming for Autonomous Robots 2010 Workshops*, pages 494–503, Darmstadt, Germany, Nov 15-16 2010.
- [39] J. Faigl, J. Chudoba, K. Košnar, M. Kulich, M. Saska, and L. Přeučil. SyRoTek - A Robotic System for Education. In *First International Conference on Robotics in Education, Bratislava*, pages 37–42, Bratislava, 2010. Slovak University of Technology in Bratislava.
- [40] J. Faigl, T. Krajník, K. Košnar, H. Szücssová, J. Chudoba, V. Grimmer, and L. Přeučil. Mobile Robotics at FEE CTU. In *First International Conference on Robotics in Education, Bratislava*, pages 43–48, Bratislava, 2010. Slovak University of Technology in Bratislava.
- [41] T. Krajník, J. Faigl, V. Vonásek, H. Szücssová, O. Fišer, and L. Přeučil. A Visual Navigation System for RoboTour Competition. In *First International Conference on Robotics in Education, Bratislava*, volume 1, pages 95–100, Bratislava, 2010. Slovak University of Technology in Bratislava.
- [42] T. Krajník, J. Faigl, and L. Přeučil. A Simple Yet Reliable Visual Navigation System. In *Mobile Robotics for Environment/Agriculture*, volume 1, Zaragoza, 2010. University of Zaragoza.
- [43] L. Mudrová, J. Faigl, J. Halgašík, and T. Krajník. Estimation of Mobile Robot Pose from Optical Mouses. In *Eurobot Conference 2010, International Conference on Research and Education in Robotics*, Bern, 2010. University of Applied Sciences.
- [44] M. Kulich, K. Košnar, J. Chudoba, J. Faigl, and L. Přeučil. On a Mobile Robotics E-learning System. In *Proceedings of the Twentieth European Meeting on Cybernetics and Systems Research*, pages 597–602, Vienna, 2010. Austrian Society for Cybernetics Studies. (*Best paper award*).
- [45] V. Vonásek, J. Faigl, T. Krajník, and L. Přeučil. RRT-Path: a guided Rapidly exploring Random Tree. In *Robot Motion and Control 2009*, pages 307–316, Heidelberg, 2009. Springer.
- [46] M. Kulich, J. Faigl, K. Košnar, L. Přeučil, and J. Chudoba. SyRoTek - On an e-Learning System for Mobile Robotics and Artificial Intelligence. In *ICAART*, pages 275–280, 2009.
- [47] J. Šváb, T. Krajník, J. Faigl, and L. Přeučil. FPGA-based Speeded Up Robust Features. In *IEEE International Conference on Technologies for Practical Robot Applications*, pages 35–41, Boston, 2009.
- [48] M. Kulich, J. Faigl, J. Chudoba, K. Košnar, L. Přeučil, and P. Štěpán. SyRoTek - A System for Robotic E-learning. In *Virtual University*, pages 241–246, Bratislava, 2007. e-Academia Slovaca.
- [49] T. Krajník, J. Faigl, and L. Přeučil. Decision support by simulation in a robotic soccer domain. In F. Breitenacker I. Troch, editor, *Proceedings 5th MATHMOD Vienna- 5th Vienna Symposium on Mathematical Modelling*, 2006.
- [50] J. Faigl, Tomáš Krajník, M. Saska, P. Štěpán, and M. Kulich. Reasoning and planning for robotsoccer. In *Proceedings of the International Symposium on Robotics (ISR 2006)*. VDI Wissensforum IWB GmbH., 2006.
- [51] J. Faigl and M. Kulich. Sensing Locations Positioning for Multi-robot Inspection Planning. In *2006 International IEEE Workshop on Distributed Intelligent Systems (DIS 2006)*, pages 79–84, Piscataway, 2006. IEEE.

- [52] J. Kubalík and J. Faigl. Iterative Prototype Optimisation with Evolved Improvement Steps. In *Genetic Programming, Proceedings of 9th European Conference, EuroGP 2006*, pages 154–165, Heidelberg, 2006. Springer.
- [53] M. Saska, M. Kulich, G. Klančar, and J. Faigl. Transformed Net - Collision Avoidance Algorithm for Robotic Soccer. In *Proceedings 5th MATHMOD Vienna- 5th Vienna Symposium on Mathematical Modelling*, Vienna, 2006. ARGESIM.
- [54] M. Kulich, J. Faigl, and L. Přeučil. Cooperative Planning for Heterogeneous Teams in Rescue Operations. In *IEEE International Workshop on Safety, Security and Rescue Robotics*, Piscataway, 2005. IEEE.
- [55] J. Faigl, G. Klančar, D. Matko, and M. Kulich. Path Planning For Multi-robot Inspection Task Considering Acceleration Limits. In *Proceedings of the fourteenth International Electrotechnical and Computer Science Conference ERK 2005*, pages 138–141, Ljubljana, 2005. IEEE Slovenia Section.
- [56] J. Faigl, M. Kulich, and L. Přeučil. Multiple Traveling Salesmen Problem with Hierarchy of Cities in Inspection Task with Limited Visibility. In *5th Workshop on Self-Organizing Maps*, pages 91–98, Orsay, 2005. Université Paris-Sud.
- [57] M. Kulich, J. Faigl, J. Kléma, and J. Kubalík. Rescue Operation Planning by Soft Computing Techniques. In *IEEE 4th International Conference on Intelligent Systems Design and Application*, volume I,II, pages 103–108, Piscataway, 2004. IEEE.

Other Publications

- [58] J. Chudoba, J. Faigl, T. Krajník, M. Kulich, L. Přeučil, and K. Košnar. SyRoTek - experimentální a tréninková aplikace pro mobilní robotiku, 2013. (functional sample).
- [59] M. Kulich, J. Chudoba, J. Faigl, K. Košnar, T. Krajník, O. Fišer, and L. Přeučil. SyRoTek - systém pro robotickou televýuku a experimentování. In *Kognice a umělý život XII (KUZ XII)*, volume 1, pages 114–119, Prague, 2012. Agentura Action M. (in Czech).
- [60] J. Faigl and T. Krajník. Uncertainty of Mobile Robot Localization in Cooperative Inspection Tasks. In *Workshop 2011*, pages 1–7, Prague, 2011. Czech Technical University in Prague.
- [61] T. Krajník, V. Vonásek, and J. Faigl. RoboTour 2009 - soutěž outdoorových robotů. *ComputerWorld - ScienceWorld*, 3(4), 2010.
- [62] T. Krajník and J. Faigl. Robot z ČVUT vítězem RoboTour 2008. *Pražská technika*, 8(5):6, 2008.
- [63] J. Faigl. Approximate Solution of the Multi-Depot Multiple Traveling Salesman Problem with MinMax Criterion, 2010. (authorized software).
- [64] T. Krajník, J. Faigl, L. Přeučil, and J. Šváb. FPGA-based Speeded Up Robust Features, 2010. (authorized software).
- [65] P. Štěpán, J. Faigl, L. Přeučil, and T. Krajník. Implementation of Euroradio FIS protocol - Subset 37 a 98, 2007. (authorized software).
- [66] P. Štěpán, J. Faigl, L. Přeučil, and T. Krajník. SAVS: Semi-Autonomous Verification System, 2007. (authorized software).
- [67] J. Faigl, M. Kulich, and L. Přeučil. Cooperative Planning in Multiple Robots Systems. In *Workshop 2006*, volume 2, pages 144–145, Prague, 2006. Czech Technical University in Prague.
- [68] J. Faigl, T. Krajník, M. Saska, K. Košnar, and J. Chudoba. Fira MiroSot - G-Bots team description. Fira EuroCup Robot Soccer Workshop, 2005.