

Ioannis M. Rekleitis

Curriculum Vitae

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Education

Ph.D. School of Computer Science, McGill University, 2003.

Specialization in mobile robotics and multi-robot localization and exploration.

Thesis Title: “Cooperative Localization and Multi-Robot Exploration”

Supervisors: Gregory Dudek and Evangelos Miliotis.

Ph.D. Committee: F. Ferrie, M. Langer, D. Precup.

External Examiner: H.I. Christensen.

M.Sc. School of Computer Science, McGill University, 1995.

Specialization in computer vision, robot navigation and image processing.

Thesis Title: “Optical Flow Estimation by Analysis of Motion Blur”

Supervisors: Godfried T. Toussaint and David Jones.

External Examiner: F. Ferrie.

B.Sc. Department of Informatics, Faculty of Science, University of Athens, Greece, 1991.

Professional Experience

- 2007-present: Adjunct Professor, School of Computer Science, McGill University.
- 2007-present: Lecturer, School of Computer Science, McGill University.
- 2004-2007: Adjunct Professor, School of Computer Science, McGill University.
- 2004-2007: Visiting Fellow, Canadian Space Agency.
- 2004: Research Associate, School of Computer Science, McGill University.
- 2002-2003: Post-doctoral Fellow, Mechanical Engineering, Carnegie Mellon University.
- 1995-2002: Research Assistant, School of Computer Science McGill University.
- 1995: Research Assistant for the PRECARN ACROBAT project, McGill University.
- 1994-1995: Research Assistant, Centre de recherche informatique de Montral (CRIM).

Research Interests

Space, Aerial, and Underwater Robotics, Multi-Robot Systems, Sensor Networks, Distributed Systems, Mobile Robotics, Artificial Intelligence, Probabilistic Reasoning, Estimation Theory, and Computer Vision.

Research Grants

- Augmentation de l'autonomie et de la facilité d'utilisation pour un groupe de robots mobiles autonomes, applicable à une oeuvre d'art symbiotique composés de dirigeables. *Fonds de recherche sur la nature et les technologies Quebec*. Co-applicant. 2011.
- Six degrees-of-freedom observation and control. *Natural Sciences and Engineering Research Council of Canada (NSERC) Research Tools and Instruments*. Co-PI. 2009.
- Enabling robotic autonomy in challenging environments: an algorithmic approach. *Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant*. 2008-2013.
- Human-Robot-Human Interface for an autonomous vehicle in challenging environments. *Microsoft Research Award*, Co-PI. 2008-2009.
- Selected to review the new laser range sensor UTM-X001S (Top-URG) from Hokuyo Automatic Co., LTD.

Awards

- Recipient of the Canadian Image Processing and Pattern Recognition Society (CIPPRS/ACTIRF) Award for Research Excellence and Service to the Community 2009, 6th Canadian Conference on Computer and Robot Vision.
- Recipient of the Director's Award for Outstanding Team Accomplishment, Directorate of Spacecraft Engineering, Canadian Space Agency, May 2007.
- Recipient of NSERC Visiting Fellowship in Canadian Government Laboratories, 2004-2007.
- Recipient of Fonds pour la formation de chercheurs et l'aide à la recherche (FCAR) Recipient of Doctoral Research Award from the Quebec government, 1998.
- Best Poster Award at the Annual Canadian Conference on Intelligent Systems, 1997.

Publications

Hirsch's h-index: 23 (from Google Scholar).

Books

[Book1] **Ioannis M. Rekleitis**. Particle Filters for Mobile Robot Localization: A Practitioner's Tutorial, Imprint: Yld Books, Forthcoming, ISBN 978-0-9809915-3-6, 2010-12.

Journal Papers

Accepted/Published

- [J10] **Ioannis M. Rekleitis**, Ai Peng New, Edward Samuel Rankin, and Howie Choset. Efficient Multi-Robot Coverage: An Algorithmic Approach. In *Annals of Mathematics and Artificial Intelligence*, 52(2-4), pages 109-142, April, 2008. [13 citations]
- [J9] Eric Martin, Régent L'Archevêque, Sébastien Gemme, **Ioannis Rekleitis**, and Erick Dupuis. AVATAR: Ground-Based Robots Operations Performed from the ISS. *IEEE Robotics and Automation Magazine*. Special Issue on Telerobotics. 15(4), pages 20-27, December 2008.

- [J8] **Ioannis Rekleitis**, Eric Martin, Guy Rouleau, Régent L'Archevêque, Kourosh Parsa, and Erick Dupuis. Autonomous Capture of a Tumbling Satellite. *Journal of Field Robotics*, Special Issue on Space Robotics. 24(4), pages 275–296, 2007. [19 citations]
- [J7] **Ioannis Rekleitis**, David Meger, and Gregory Dudek. Simultaneous Planning, Localization, and Mapping in a Camera Sensor Network. In *Robotics and Autonomous Systems Journal*, 54(11), pages 921–932, November 2006. [33 citations]
- [J6] Brad Lisien, Deryck Morales, David Silver, George Kantor, **Ioannis M. Rekleitis**, and Howie Choset. The Hierarchical Atlas. *IEEE Transactions of Robotics*, 21(3), pages 473–481, June 2005. [35 citations]
- [J5] Stergios I. Roumeliotis and **Ioannis M. Rekleitis**. Propagation of Uncertainty in Cooperative Multirobot Localization: Analysis and Experimental Results. *Autonomous Robots*, 17(1), pages 41–54, July 2004. [64 citations]
- [J4] **Ioannis M. Rekleitis**, Gregory Dudek, and Evangelos Milios. Multi-Robot Collaboration for Robust Exploration. *Annals of Mathematics and Artificial Intelligence*, 31(1-4):7–40, 2001. [183 citations]

Under Revision

- [J3] **Ioannis Rekleitis**, Jean-Luc Bedwani, Erick Dupuis, Tom Lamarche, and Pierre Allard. Autonomous Over-the-Horizon Navigation using LIDAR data. *Autonomous Robots*, (under revision 2011, 21 pages).
- [J2] Dimitri Marinakis, David Meger, **Ioannis Rekleitis**, and Gregory Dudek. Inferring a Probability Distribution Function for the pose of a Sensor Network using a Mobile Robot. *IEEE Transactions of Robotics*, (under revision 2009, 12 pages).

Submitted

- [J1] Anqi Xu, Chatavut Viriyasuthee, and **Ioannis Rekleitis**. Optimal Complete Coverage of a Known Arbitrary Environment with Applications to Aerial Operations. *IEEE Transactions of Robotics*, (submitted 2011, 14 pages).

Book Chapters

- [B6] **Ioannis M. Rekleitis**, Robert Sim, and Gregory Dudek. Cooperative Exploration, Localization, and Visual Map Construction. In *Brain, Body and Machine*, Proceedings of an International Symposium on the occasion of the 25th Anniversary of the McGill University Centre for Intelligent Machines, pages 227–245, J. Angeles, B. Boulet, J. Clark, J. Kovacs, and K. Siddiqi (eds.), Advances in Intelligent and Soft Computing, 83, Springer, 2010.
- [B5] **Ioannis Rekleitis**, Jean-Luc Bedwani, David Gingras, and Erick Dupuis. Experimental Results for Over-the-Horizon Planetary Exploration Using a LIDAR Sensor. In *Experimental Robotics The Eleventh International Symposium*, pages 65–77, O. Khatib, V. Kumar, and G. Pappas (eds.), Springer tracts in advanced robotics (54), 2009.
- [B4] Erick Dupuis, Régent L'Archevêque, Pierre Allard, **Ioannis Rekleitis**, and Eric Martin. Toward Fully Autonomous Robotics Operation Framework. In *Intelligence for Space Robotics*, pages 217–234, Ayanna Howard and Eddie Tunstel (eds.), TSI Press, Albuquerque, NM, USA, 2005.

- [B3] **Ioannis M. Rekleitis**, Ai Peng New and Howie Choset. Distributed Coverage of Unknown/Unstructured Environments by Mobile Sensor Networks. In *Multi-Robot Systems. From Swarms to Intelligent Automata*, pages 145–155, Volume III, Lynne E. Parker, Frank E. Schneider and Alan C. Schultz (eds.), Springer, 2005.
- [B2] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Milios. On the Positional Uncertainty of Multi-Robot Cooperative Localization. In *Multi-Robot Systems: From Swarms to Intelligent Automata*, pages 3–10, Alan C. Schultz and Lynne E. Parker (eds.), Kluwer Academic, 2002.
- [B1] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Milios. Exploration, Mapping, and Model Acquisition In *Distributed Autonomous Robotic Systems 4*, pages 241–250, 2000.

Fully Refereed Conference Papers

Acceptance rate given if below 40%

- [C54] **Ioannis Rekleitis**. Single Robot Exploration: Simultaneous Localization and Uncertainty Reduction on Maps (SLURM). In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2012, (submitted).
- [C53] Philippe Giguère¹ and **Ioannis Rekleitis**. I see you, you see me: Cooperative Localization through Bearing-Only Mutually Observing Robots. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2012, (submitted).
- [C52] Florian Shkurti, Anqi Xu, Malika Meghjani, Juan Camilo Gamboa Higuera, Yogesh Girdhar, Philippe Giguère, Bir Bikram Dey, Jimmy Li, Arnold Kalmbach, Chris Prahacs, Katrine Turgeon, **Ioannis Rekleitis**, and Gregory Dudek. Multi-Domain Monitoring of Marine Environments using a Heterogeneous Robot Team. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2012, (submitted).
- [C51] **Ioannis Rekleitis**. Simultaneous Localization and Uncertainty Reduction on Maps (SLURM): Ear based Exploration. In *Proc. of Ninth Canadian Conference on Computer and Robot Vision*, Toronto, ON, May, 2012, (accepted).
- [C50] Florian Shkurti, **Ioannis Rekleitis**, Milena Scaccia, and Gregory Dudek. State Estimation of an Underwater Robot Using Visual and Inertial Information. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 5054–5060, San Francisco, California, Sept. 2011. [32% acceptance rate]
- [C49] Yogesh Girdhar, Anqi Xu, Bir Bikram Dey, Malika Meghjani, Florian Shkurti, **Ioannis Rekleitis**, and Gregory Dudek. MARE: Marine Autonomous Robotic Explorer. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 5048–5053, San Francisco, California, Sept. 2011. [32% acceptance rate]
- [C48] Florian Shkurti, **Ioannis Rekleitis**, and Gregory Dudek. Feature Tracking Evaluation for Pose Estimation in Underwater Environments. In *Eighth Canadian Conference on Computer and Robot Vision (CRV 2011)*, pages 160–167, St. John's, Newfoundland, May, 2011.
- [C47] Anqi Xu, Chatavut Viriyasuthee, and **Ioannis Rekleitis**. Complete Optimal Terrain Coverage using an Unmanned Aerial Vehicle. In *IEEE International Conference on Robotics and Automation (ICRA)*, pages 2513–2519, Shanghai, China, May, 2011.
- [C46] **Ioannis M. Rekleitis**, Robert Sim and Gregory Dudek. Cooperative Exploration, Localization, and Visual Map Construction. In *Brain, Body and Machine*, Proceedings of an International Symposium on the Occasion of the 25th Anniversary of the McGill University Centre for Intelligent Machines, pages 227–245, J. Angeles, B. Boulet, J. Clark, J. Kovacs, and K. Siddiqi (eds.), 83, Springer, 2010.

- [C45] Jean-Luc Bedwani, **Ioannis Rekleitis**, Francois Michaud, Erick Dupuis. Multi-Layer Atlas System for Map Management. In *Proc. of Seventh Canadian Conference on Computer and Robot Vision*, pages 207–214, Ottawa, ON, May, 2010.
- [C44] **Ioannis Rekleitis**, Gregory Dudek, Yasmina Schoueri, Philippe Giguere, and Junaed Sattar. Telepresence across the ocean. In *Proc. of Seventh Canadian Conference on Computer and Robot Vision*, pages 261-268, Ottawa, ON, May, 2010.
- [C43] Raphael Mannadiar and **Ioannis Rekleitis**. Optimal Coverage of a Known Arbitrary Environment. In *Proc. of IEEE International Conference on Robotics and Automation (ICRA)*, pages 5525-5530, Anchorage, AK, 2010.
- [C42] Yasmina Schoueri, Milena Scaccia, and **Ioannis Rekleitis**. Optical Flow from Motion Blurred Color Images. In *Proc. of Sixth Canadian Conference on Computer and Robot Vision (CRV)*, pages 1-7, Kelowna, BC, May, 2009.
- [C41] **Ioannis Rekleitis**, Jean-Luc Bedwani, and Erick Dupuis. Autonomous Planetary Exploration using LIDAR data. In *Proc. of IEEE International Conference on Robotics and Automation (ICRA)*, pages 3025-3030, Kobe, Japan, 12-17 May 2009.
- [C40] David Paul Meger, Dimitri Marinakis, **Ioannis Rekleitis**, Gregory Dudek. Inferring a Probability Distribution Function for the Pose of a Sensor Network using a Mobile Robot. In *Proc. of IEEE International Conference on Robotics and Automation (ICRA)*, pages 756-762, Kobe, Japan, 12-17 May 2009.
- [C39] Erick Dupuis, **Ioannis Rekleitis**, Jean-Luc Bedwani, David Gingras, Pierre Allard, Tom Lamarche, and Wen-Hong Zhu. Autonomous Over-The-Horizon Rover Navigation. In *Proc. of 10th ESA Workshop on Advanced Space Technologies for Robotics and Automation, (ASTRA)*, ESTEC, Noordwijk, The Netherlands, 11-13 Nov. 2008.
- [C38] David Meger, **Ioannis Rekleitis**, and Gregory Dudek. Heuristic Search Planning to Reduce Exploration Uncertainty. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 3382 – 3399, Nice, France, Sept. 21-25 2008.
- [C37] Junaed Sattar, Gregory Dudek, Olivia Chiu, **Ioannis Rekleitis**, Philippe Giguère, Alec Mills, Nicolas Plamondon, Chris Prahacs, Yogesh Girdhar, Meyer Nahon, and John-Paul Lobos. Enabling Autonomous Capabilities in Underwater Robotics. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 3628 – 3634, Nice, France, Sept. 21-25 2008.
- [C36] S. Skaff, J.J. Clark, and **Ioannis Rekleitis**. Estimating Surface Reflectance Spectra for Underwater Color Vision. In *Proc. of British Machine Vision Conference (BMVC)*, Leeds, U.K., September 2008. [Poster, 35% acceptance rate]
- [C35] **Ioannis Rekleitis**, Jean-Luc Bedwani, and Erick Dupuis. Experimental Results for Over-the-Horizon Planetary Exploration using a LIDAR sensor. In *Proc. of 11th International Symposium on Experimental Robotics (ISER '08)*, Athens, Greece, July 14-17 2008.
- [C34] **Ioannis Rekleitis**, Jean-Luc Bedwani, Erick Dupuis, and Pierre Allard. Path Planning for Planetary Exploration. In *Proc. of Fifth Canadian Conference on Computer and Robot Vision (CRV)*, pages 61–68, Windsor, ON, 28-30 May 2008.
- [C33] Erick Dupuis, **Ioannis Rekleitis**, and Jean-Luc Bedwani. Over-the-Horizon Autonomous Rover Navigation - Experimental Results. In *Proc. of 8th International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS)*, Los Angeles, California, Feb. 2008.

- [C32] **Ioannis Rekleitis**, Jean-Luc Bedwani, and Erick Dupuis. Over the Horizon, Autonomous Navigation for Planetary Exploration. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 2248-2255, San Diego, California, USA, Oct. 2007.
- [C31] Dimitrios Marinakis, David Meger, **Ioannis Rekleitis**, and Gregory Dudek. Markov Chain Monte-Carlo Inference for Hybrid Sensor Network Pose Estimation. In *Proc. of the Twenty-Second AAAI Conference on Artificial Intelligence (AAAI)*, pages 1089–1094, Vancouver, British Columbia, Canada, July 22 - 26, 2007. [27.5% acceptance rate]
- [C30] **Ioannis Rekleitis**, Jean-Luc Bedwani, Sébastien Gemme, and Erick Dupuis. Terrain Modelling for Planetary Exploration. In *Proc. of Computer and Robot Vision (CRV)*, pages 243–249, Montreal, Quebec, Canada, May, 2007.
- [C29] Erick Dupuis, Joseph Nsasi Bakambu, **Ioannis Rekleitis**, Jean-Luc Bedwani, Sébastien Gemme, and Jean Patrice Rivest-Caissy. Autonomous Long-Range Rover Navigation – Experimental Results. In *Proc. of 9th ESA Workshop on Advanced Space Technologies for Robotics and Automation, (ASTRA)*, pages 125–132, ESTEC, Noordwijk, The Netherlands, 28-30 Nov. 2006.
- [C28] David Meger, **Ioannis Rekleitis**, and Gregory Dudek. Autonomous Mobile Robot Mapping of a Camera Sensor Network. In *Proc. of 8th International Symposium on Distributed Autonomous Robotic Systems (DARS)*, pages 155 - 164, Minnesota, Minneapolis, July 2006.
- [C27] Guy Rouleau, **Ioannis Rekleitis**, Régent L'Archevêque, Eric Martin, Kourosh Parsa, Erick Dupuis and Wen Hong Zhu. Autonomous Capture of a Tumbling Satellite. In *Proc. of IEEE International Conference on Robotics and Automation (ICRA)*, pages 3855 - 3860, Orlando, FL, USA, May, 2006. [38.7% acceptance rate]
- [C26] Chan Sze Kong, Ai Peng New and **Ioannis Rekleitis**. Distributed Coverage with Multi-Robot System. In *Proc. of IEEE International Conference on Robotics and Automation (ICRA)*, pages 2423 - 2429, Orlando, FL, USA, MIROSAy 2006. [38.7% acceptance rate]
- [C25] Joseph Nsasi Bakambu, Sébastien Gemme, Pierre Allard, Tom Lamarche, **Ioannis Rekleitis** and Erick Dupuis. 3D Reconstruction of Environments for Tele-Operation of Planetary Rover. In *44th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, USA, 9 - 12 Jan. 2006.
- [C24] Pierre Allard, Joseph Nsasi Bakambu, Tom Lamarche, **Ioannis Rekleitis** and Erick Dupuis, Towards Autonomous Long Range Navigation. In *Proc. of 8th International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS)*, Munich, Germany, Sept., 2005.
- [C23] **Ioannis M. Rekleitis** and Gregory Dudek, Automated Calibration of a Camera Sensor Network. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 401–406, Edmonton, AB, Canada, Aug. 2-6, 2005.
- [C22] Gregory Dudek, Michael Jenkin Chriss Prahacs, Andrew Hogue, Junaed Sattar, Philippe Giguere, Andrew German, Hongyu Liu, Shane Saunderson, Arlene Ripsman, Saul Simhon, Luz Abril Torres-Mndez, Evangelos Milios, Pifu Zhang, and **Ioannis M. Rekleitis**. A Visually Guided Swimming Robot. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 1749–1754, Edmonton, AB, Canada, Aug. 2-6, 2005.
- [C21] Sébastien Gemme, Joseph Nsasi Bakambu and **Ioannis Rekleitis**. 3D Reconstruction of Environments for Planetary Exploration. In *Proc. of Second Canadian Conference on Computer and Robot Vision (CRV)*, pages 594–601 (poster presentation), Victoria, BC, Canada, May 9-11, 2005.

- [C20] **Ioannis M. Rekleitis**, Ai Peng New and Howie Choset. Distributed Coverage of Unknown/Unstructured Environments by Mobile Sensor Networks. In *Proc. of 3rd International NRL Workshop on Multi-Robot Systems*, pages 145–155, Washington, D.C., USA, March 14-16, 2005.
- [C19] **Ioannis M. Rekleitis**, Vincent Lee-Shue, Ai Peng New and Howie Choset. Limited Communication, Multi-Robot Team Based Coverage. In *Proc. of IEEE International Conference in Robotics and Automation (ICRA)*, pages 3462–3468, New Orleans, LA, USA, Apr. 26-30, 2004. [100 citations]
- [C18] David Silver, Deryck Morales, **Ioannis M. Rekleitis**, Brad Lisien, George Kantor and Howie Choset. Arc Carving: Obtaining Accurate, Low Latency Maps from Ultrasonic Range Sensors. In *Proc. of IEEE International Conference in Robotics and Automation (ICRA)*, pages 1554–1561, New Orleans, LA, USA, Apr. 26-30, 2004.
- [C17] Brad Lisien, Deryck Morales, David Silver, George Kantor, **Ioannis M. Rekleitis** and Howie Choset. Hierarchical Simultaneous Localization and Mapping. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 448–453, Las Vegas, NV, USA, Oct. 27-31, 2003. [61 citations]
- [C16] Stergios I. Roumeliotis and **Ioannis M. Rekleitis**, Analysis of Multirobot Localization Uncertainty Propagation. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 1763–1770, Las Vegas, NV, USA, Oct. 27-31, 2003.
- [C15] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Miliotis. Experiments in Free-Space Triangulation Using Cooperative Localization. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 1777–1782, Las Vegas, NV, USA, Oct. 27-31, 2003.
- [C14] **Ioannis M. Rekleitis** and Stergios I. Roumeliotis. Analytical Expressions for Positioning Uncertainty Propagation in Networks of Robots. In *Proc. of the 11th IEEE Mediterranean Conference on Control and Automation*, pages 131–136, Rhodes, Greece, June 17-20, 2003.
- [C13] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Miliotis. Probabilistic Cooperative Localization and Mapping in Practice. In *Proc. of IEEE International Conference in Robotics and Automation (ICRA)*, pages 1907–1912, Taipei Taiwan, Sept. 2003. [49 citations]
- [C12] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Miliotis. Multi-robot Cooperative Localization: A study of Trade-offs Between Efficiency and Accuracy. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 2690–2695, Lausanne, Switzerland, Oct. 2002. [80 citations]
- [C11] **Ioannis Rekleitis**, Robert Sim, Gregory Dudek and Evangelos Miliotis. Collaborative Exploration for the Construction of Visual Maps. In *Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, volume 3, pages 1269–1274, Maui, HI, USA, Oct. 2001.
- [C10] **Ioannis M. Rekleitis**, Robert Sim, Gregory Dudek and Evangelos Miliotis. Collaborative Exploration for Map Construction. In *Proc. of IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA)*, pages 296–301, Banff, AB, Canada, July 2001.
- [C9] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Miliotis. Graph-based Exploration Using Multiple Robots. In *Proc. of 5th International Symposium on Distributed Autonomous Robotic Systems (DARS)*, pages 241–250, Knoxville, TN, USA, Oct. 4-6 2000. Springer. Appeared also as a chapter in “Distributed Autonomous Robotic Systems 4”.
- [C8] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Miliotis. Multi-Robot Collaboration for Robust Exploration. In *Proc. of IEEE International Conference in Robotics and Automation (ICRA)*, pages 3164–3169, San Francisco, CA, USA, Apr. 2000.

- [C7] **Ioannis M. Rekleitis**, Vida Dujmović and Gregory Dudek. Efficient Topological Exploration. In *Proc. of IEEE International Conference in Robotics and Automation (ICRA)*, pages 676–681, Detroit, MI, USA, May 1999.
- [C6] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos E. Milios. On Multiagent Exploration. In *Proc. of Vision Interface*, pages 455–461, Vancouver, BC, Canada, June 1998.
- [C5] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Milios. Multi-Robot Exploration of an Unknown Environment, Efficiently Reducing the Odometry Error. In *Proc. of International Joint Conference on Artificial Intelligence (IJCAI)*, vol. 2, pages 1340–1345, Nagoya, Japan, Aug. 1997. [22% acceptance rate, 131 citations]
- [C4] **Ioannis M. Rekleitis**. Optical Flow Recognition from the Power Spectrum of a Single Blurred Image. In *Proc. of IEEE International Conference in Image Processing*, pages 791–794, Lausanne, Switzerland, Sep. 1996.
- [C3] Gregory Dudek, Paul Freedman and **Ioannis M. Rekleitis**. Environment Exploration Using “Just-In-Time” Sensor Fusion. In *Proc. of Vision Interface*, pages 175–182, Toronto, ON, Canada, May 1996.
- [C2] **Ioannis M. Rekleitis**. Steerable Filters and Cepstral Analysis for Optical Flow Calculation from a Single Blurred Image. In *Proc. of Vision Interface*, pages 159–166, Toronto, ON, Canada, May 1996.
- [C1] Gregory Dudek, Paul Freedman and **Ioannis M. Rekleitis**. Just-In-Time Sensing: Efficiently Combining Sonar and Laser Range Data for Exploring Unknown Worlds. In *Proc. of IEEE International Conference in Robotics and Automation (ICRA)*, volume 1, pages 667–671, Minneapolis, MN, USA, Apr. 1996. [39 citations]

Editorials and Invited Conference/Workshop Papers

- [N2] Robert Sim, Greg Mori, and **Ioannis M. Rekleitis**. Editorial, Second and Third Canadian Conferences on Computer and Robot Vision. In *Image and Vision Computing, Special Issue*, v. 27, p. 1, 2009.
- [N1] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos E. Milios. On the Positional Uncertainty of Multi-Robot Cooperative Localization. In *Proc. of Multi-Robot Systems Workshop, Naval Research Laboratory*, Washington, DC, USA, March 18-20 2002. Appeared also as a chapter in “Multi-Robot Systems: From Swarms to Intelligent Automata”.

Technical Reports

- [TR4] **Ioannis Rekleitis**. A Particle Filter Tutorial for Mobile Robot Localization. Technical Report TR-CIM-04-02, Centre for Intelligent Machines, McGill University, Montreal, Québec, Canada, 2004. [118 citations]
- [TR3] **Ioannis M. Rekleitis**. Bug Algorithm Survey. Technical Report TR-CIM-00-02, Centre for Intelligent Machines, McGill University, 3480 University St., Montreal, Québec, Canada H3A 2A7, 2000.
- [TR2] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Milios. Multi-Robot Collaboration for Robust Exploration. Technical Report CS-1999-10, York University, 1999.
- [TR1] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Milios. Optimality Proof for the Trapezoid Decomposition. Technical Report TR-CIM-97-01, Centre for Intelligent Machines, McGill University, 3480 University St., Montreal, Québec, Canada H3A 2A7, January 1997.

Non-Refereed Posters

- [P7] **Ioannis Rekleitis** and Gregory Dudek. Tele-presence Across the Ocean. In External Research Symposium, Microsoft Research. Bellevue, WA, USA. March 29-31 2009.
- [P6] **Ioannis Rekleitis** and Gregory Dudek. Human-Robot-Human Interface for an autonomous vehicle in challenging environments. For Microsoft Research External Research group, July, 2008.
- [P5] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos E. Miliotis. Monte-Carlo Simulation for Multi-Robot Cooperative Localization. In *PRECARN/IRIS Annual Canadian Conference on Intelligent Systems Conference* Ottawa, ON, Canada, June 2002.
- [P4] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos E. Miliotis. Multi-Robot Exploration: Triangulating the Free Space. In *PRECARN/IRIS Annual Canadian Conference on Intelligent Systems Conference* Vancouver, BC, Canada, June 1998.
- [P3] **Ioannis M. Rekleitis**. Optical Flow Recognition from the Power Spectrum of a Single Blurred Image. In *PRECARN/IRIS Annual Canadian Conference on Intelligent Systems Conference* Ottawa, ON, Canada, June 10-13, 1997.
- [P2] **Ioannis M. Rekleitis**, Gregory Dudek and Evangelos Miliotis. Multi-Robot Exploration of an Unknown World, Efficiently Reducing the Odometry Error. In *PRECARN/IRIS Annual Canadian Conference on Intelligent Systems Conference* Ottawa, ON, Canada, (*Best Poster Award*), June 10-13, 1997.
- [P1] **Ioannis M. Rekleitis**, Gregory Dudek and Paul Freedman. Mobile Robot Exploration by Using Fused Data from two Sensors. In Proc. of *PRECARN/IRIS Annual Canadian Conference on Intelligent Systems Conference* Vancouver, BC, Canada, June 14-16, 1995.

Others

- [O3] **Ioannis M. Rekleitis**. Cooperative Localization and Multi-Robot Exploration. *Ph.D. thesis*, School of Computer Science, McGill University, Montreal, Québec, Canada, 2003. [49 citations]
- [O2] **Ioannis M. Rekleitis**. Visual Motion Estimation Based on Motion Blur Interpretation. *M.Sc. thesis*. School of Computer Science, McGill University, Montreal, Québec, Canada, 1995.
- [O1] **Ioannis M. Rekleitis**, Dimitris Mavropoulos and Athanasios Athanasopoulos. An Image Processing Environment for the Tektronix Workstation. *Bachelor Thesis (In Greek)*, Department of Informatics, University of Athens, Athens, Greece, 1991.

Professional Activities and Affiliations

- **Program Co-Chair:**
Canadian Conference on Computer and Robot Vision (CRV), 2005.
Canadian Conference on Computer and Robot Vision (CRV), 2006.
- **Guest Editor**, Image and Vision Computing, Special Issue on the 2005 and the 2006 Canadian Conference on Computer and Robot Vision.
- **Workshop Organizer**, IEEE/RSJ International Conference on Intelligent Robots and Systems, “Robot Vision for Space Applications”, with Leo Hartman, Martin Jagersand and Piotr Jasiobedzki, Edmonton, Alberta, August 2005.

- **Conference Associate Editor:**
 - IEEE International Conference on Robotics and Automation (ICRA) 2010-2012.
 - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2008-2012.
- **Program Committee Member:**
 - Robotics: Science and Systems Conference (RSS) 2006-2011.
 - International Symposium on Distributed Autonomous Robotic Systems (DARS) 2006.
 - IEEE International Conference on Robotics and Automation (ICRA) 2006.
 - IEEE International Conference on Mechatronics and Automation (ICMA) 2005.
 - Canadian Conference on Computer and Robot Vision (CRV) 2005-2011.
 - International Symposium on Robotics (ISR) 2000.
- **Proposal Reviewer**
 - Natural Sciences and Engineering Research Council of Canada (NSERC).
 - European Commission.
- Member of the Institute for Electrical and Electronic Engineers (IEEE) since 1995.
- **Coordinator:** Center for Intelligent Machines reading group for Robot Software Architectures (2004).
- **Reviewer:**
 - Journals: IEEE Transactions on Robotics, IEEE Transactions on Robotics and Automation; International Journal of Robotics Research; IEEE Transactions in Control; IEEE Transactions on Systems, Man, and Cybernetics; IEEE/ASME Transactions on Mechatronics; IEEE Transactions on Intelligent Transportation Systems; International Journal of Computer Vision; Journal of Artificial Intelligence Research; Autonomous Robots; Robotics and Autonomous Systems Journal; Journal of Field Robotics; Image and Vision Computing.
 - Conferences: Robotics Science and Systems; American Association of Artificial Intelligence (AAAI); International Symposium of Robotics Research (ISRR); IEEE International Conference on Robotics and Automation (ICRA); IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS); International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS); Vision Interface, Canadian Conference on Computer and Robot Vision (CRV).

Teaching

- 2007-2011 Lecturer, McGill University.
 - “Introduction to Robotics and Intelligent Systems”, 4th year undergraduate course, School of Computer Science, Sep. 2011 - Dec. 2011.
 - “Introduction to Robotics and Intelligent Systems”, 4th year undergraduate course, School of Computer Science, Sep. 2010 - Dec. 2010.
 - “Spatial Representation and Mobile Robotics”, advanced graduate course, School of Computer Science, Jan. 2010 - Apr. 2010.
 - “Introduction to Robotics and Intelligent Systems”, 4th year undergraduate course, School of Computer Science, Sep. 2009 - Dec. 2009.
 - “Spatial Representation and Mobile Robotics”, advanced graduate course, School of Computer Science, Jan. 2009 - Apr. 2009.
 - “Introduction to Robotics and Intelligent Systems”, 4th year undergraduate course, School of Computer Science, Sep. 2008 - Dec. 2008.
 - “Introduction to Software Systems”, 2nd year undergraduate course, School of Computer Science, Jan. 2007 - Apr. 2007.
- 1992-2000 Teaching Assistant, McGill University. Assisted in a variety of courses by giving tutorials, marking assignments and exams, and helping students.
 - “Introduction to Computing”, School of Computer Science, Jan. 1993 - Apr. 1993.
 - “Introduction to Computer Science”, School of Computer Science, Sep. 1992 - Dec. 1992, Sep. 1993 - Dec. 1993. Among other duties, I held weekly one hour lectures.
 - “Computers for Engineers”, School of Computer Science, Jan. 1992 - Apr. 1992, Sep. 1993 - Dec. 1993, Sep. 1999 - Dec. 1999.
 - “Principles of Assembly Languages”, School of Computer Science, Sep. 1995 - Dec. 1995, Sep. 1996 - Dec. 1996, Sep. 1997 - Dec. 1997.
 - “Artificial Intelligence”, School of Computer Science, Sep. 1998 - Dec. 1998, Sep. 1999 - Dec. 1999.
 - “Operating Systems”, Department of Electrical Engineering, Jan. 1993 - Apr. 1993, Jan. 1994 - Apr. 1994.
 - “Fundamentals of Computer Graphics”, School of Computer Science, Jan. 1995 - Apr. 1995, Jan. 1996 - Apr. 1996, Jan. 1997 - Apr. 1997, Jan. 1998 - Apr. 1998, Jan. 1999 - Apr. 1999, Jan. 2000 - Apr. 2000.

Invited Seminars/Talks

- [T25] Invited talk “Algorithmic Robotics: Enabling Autonomy in Challenging Environments”, at the Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology (MIT), USA, 20 Sept. 2011.
- [T24] Invited talk “Algorithmic Robotics: Enabling Autonomy in Challenging Environments”, at the School of Computer Science, University of Birmingham, UK, 16 May 2011.
- [T23] Invited tutorial “Particle Filters for Mobile Robot Navigation” at the CRV 2010 Tutorial Day, Seventh Canadian Conference on Computer and Robot Vision (CRV), 30 May 2010.
- [T22] Invited tutorial “Exploration” at the CRV 2010 SLAM Camp, Seventh Canadian Conference on Computer and Robot Vision (CRV), 29 May 2010.

- [T21] Invited tutorial “Robot exploration” at the Short Course on “New Frontiers in Robot Navigation”, 17th Mediterranean Conference on Control and Automation (23 Jun. 2009).
- [T20] Invited tutorial “Particle Filters for Mobile Robot Navigation” at the Sixth Canadian Conference on Computer and Robot Vision (CRV 2009), Kelowna, British Columbia, (24 May 2009).
- [T19] “Algorithmic Robotics: Enabling Autonomy in Challenging Environments” at the Department of Computer Science and Engineering, University of Washington. Seattle, WA, USA (2 Apr. 2009).
- [T18] “Autonomous Planetary Exploration using Irregular Triangular Mesh” at USC CS Colloquium Series. Los Angeles, CA, USA (25 Oct. 2007).
- [T17] “Developing Autonomous Robots for Planetary Exploration”. Invited talk at the 6th Students in Aerospace Forum, Montreal, QC, Canada (15 Sept. 2007).
- [T16] “Multi-Robot Coverage and Planetary Exploration” at Rensselaer Polytechnic Institute, Troy, NY, USA (14 Aug. 2007).
- [T15] “Multi-Robot Coverage and Planetary Exploration” at the University of British Columbia, Vancouver, BC, Canada (14 May 2007).
- [T14] “Monte-Carlo Simulation for Pose Estimation in Mobile Sensor Networks” at the Mathematics of Information Technology and Complex Systems (MITACS) seminar, McGill University, Montreal, QC, Canada (15 March 2007).
- [T13] “Cooperative Localization, Mapping, Exploration, and Coverage” at the University of Alberta, Edmonton, AB, Canada (2 Aug. 2005).
- [T12] “Computer Science, Robots, and Space”, invited lecture at the Summer Camp “Be a Computer Scientist for a week”, organized by McGill University, Montreal, QC, Canada (11 July 2005, 3 July 2006).
- [T11] “Cooperative Localization, Mapping, Exploration, and Coverage” at the Simon Fraser University, Burnaby, BC, Canada (16 May 2005).
- [T10] “Cooperative Localization, Mapping, Exploration, and Coverage” at the University of British Columbia, Vancouver, BC, Canada (6 May 2005).
- [T9] “Probabilistic Multi-Robot SLAM” at the 1st International Workshop on Computational Robotics for Unstructured Environments: Underwater Environments, Bellairs Research Institute, Barbados (13 Jan. 2004).
- [T8] “Localization and Exploration with Mobile Robots” at the Centre for Intelligent Machines, McGill University (24 Apr. 2003).
- [T7] “Probabilistic Cooperative Localization and Mapping in Practice” at the Vision and Autonomous Systems Center (VASC) seminar, Robotics Institute, Carnegie Mellon University (7 Apr. 2003).
- [T6] “Cooperative Localization and Multi-Robot Exploration” at the Dep. of Computer Science and Engineering, University of Minnesota, Twin Cities (10 Jan. 2003).
- [T5] “Cooperative Localization and Multi-Robot Exploration” at the Manipulation Lab Seminar, Carnegie Mellon University (4 Sept. 2002).
- [T4] “On the Positional Uncertainty of Multi-Robot Cooperative Localization” at the Multi-Robot Systems Workshop, Naval Research Laboratory (18 Mar. 2002).
- [T3] “Cooperative Localization and Multi-Robot Exploration” at Stanford University (1 Jun. 2001).

[T2] “Cooperative Localization and Multi-Robot Exploration” at the Bay Area Robotics Colloquium, Xerox Palo Alto Research Center (31 May 2001).

[T1] “Cooperative Localization and Multi-Robot Exploration” at Carnegie Mellon University (11 Oct. 2000).