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EDUCATION **University of Minnesota (UMN)**, Ph.D. in Computer Science, June 2008.

University of Patras, Diploma in Electrical and Computer Engineering, June 2003.

PROFESSIONAL EXPERIENCE **University of California, Riverside (UCR), Department of Electrical and Computer Engineering**, Associate Professor, July 2014-present.

University of California, Riverside (UCR), Department of Electrical Engineering, Assistant Professor, July 2008-June 2014.

UMN Department of Computer Science and Engineering, Research Assistant, Aug. 2003-June 2008.

UMN Department of Computer Science and Engineering, Teaching Assistant, Fall 2004, Fall 2005.

RESEARCH INTERESTS Vision-aided inertial navigation for resource-constrained systems, distributed estimation in multi-robot teams, simultaneous localization and mapping, structure from motion.

AWARDS **National Science Foundation CAREER** award, 2013.

Orange County Engineering Council 2013 Outstanding Engineering Educator Award.

Hellman Family Foundation, 2011-2012 Hellman Fellow.

IEEE Transactions on Robotics, 2009 Best Paper Award, paper J7.

UCR, Regents' Faculty Fellowship Award, 2009-2010.

UMN, Best Dissertation Award Nominee, 2009.

UMN, Doctoral Dissertation Fellowship 2007-2008.

UMN Department of Computer Science and Engineering, Excellence in Research Award Fellowships, 2005 and 2006.

UMN Department of Computer Science and Engineering, Academic Excellence Fellowship, Spring 2004.

Bodosaki Foundation, Scholarship for ranking 1st in Greece (among 25,000 candidates) in the National University Admission Examinations.

ACADEMIC SERVICE

Conferences: Member of the International Program Committee for the 2009, 2012, and 2013 Robotics: Science and Systems conference.

Reviewing:

JOURNALS: IEEE Transactions on Robotics, IEEE Transactions on Automation Science and Engineering, International Journal of Robotics Research, Autonomous Robots, Journal of Field Robotics, Robotics and Automation Magazine, Journal of Machine Vision and Applications, Journal of Intelligent and Robotic Systems, SIAM Journal on Matrix Analysis and Applications, International Journal of AI Tools.

CONFERENCES: Robotics: Science and Systems, IEEE International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Workshop on the Algorithmic Foundations of Robotics (WAFR), IEEE Conference on Decision and Control (CDC), IEEE International Conference on Intelligent Transportation Systems (ITSC), Canadian Conference on Computer and Robot Vision (CRV), International Conference on Advanced Robotics (ICAR), IEEE Mediterranean Conference on Decision and Control (MED).

TECHNICAL SOCIETIES MEMBERSHIPS

IEEE, IEEE Robotics and Automation Society, Technical Chamber of Greece.

PUBLICATIONS DISSERTATIONS

“Characterization and Optimization of the Accuracy of Mobile Robot Localization,” PhD Dissertation, Department of Computer Science and Engineering, University of Minnesota, June 2008.

“3-D Reconstruction from Sequences of Images of a Moving Camera,” Engineering Diploma Thesis, Department of Electrical and Computer Engineering, University of Patras, June 2003 (in Greek).

JOURNAL ARTICLES

J14. P. Deng, Q. Zhu, A. Davare, A.I. Mourikis, X. Liu, M. Di Natale: “An Efficient Control-driven Period Optimization Algorithm for Distributed Real-time Systems,” *IEEE Transactions on Computers*, 2016, in print.

J13. M. Li, A.I. Mourikis: “Vision-aided Inertial Navigation with Rolling-Shutter Cameras,” *International Journal of Robotics Research*, 33(11), pp. 1490-1507, September 2014.

J12. M. Li, A.I. Mourikis: “Online Temporal Calibration for Camera-IMU Systems: Theory and Algorithms,” *International Journal of Robotics Research*, 33(7), pp. 947-964, June 2014.

J11. G. Huang, A.I. Mourikis, S.I. Roumeliotis: “A Quadratic-Complexity Observability-Constrained Unscented Kalman Filter for SLAM,” *IEEE Transactions on Robotics*, 29(5), pp. 1226-1243, October 2013.

J10. M. Li, A.I. Mourikis: “High-Precision, Consistent EKF-based Visual-Inertial Odometry,” *International Journal of Robotics Research*, 32(6), pp. 690-711, May 2013.

J9. N. Trawny, G. Huang, A.I. Mourikis, S.I. Roumeliotis: “Observability-based Consistent EKF Estimators for Multi-robot Cooperative Localization,” *Autonomous Robots*, 30(1), pp. 99-122, 2011.

J8. G. Huang, A.I. Mourikis, S.I. Roumeliotis: “Observability-based Rules for Designing Consistent EKF SLAM Estimators,” *International Journal of Robotics Research*, 29(5), pp. 502-528, April 2010.

J7. A.I. Mourikis, N. Trawny, S.I. Roumeliotis, A. Johnson, A. Ansar, L. Matthies: “Vision-Aided Inertial Navigation for Spacecraft Entry, Descent, and Landing,” *IEEE Transactions on Robotics*, 25(2), pp. 264-280, April 2009. **2009 IEEE Transactions on Robotics Best Paper Award (King-Sun Fu Memorial Award)**

J6. A.I. Mourikis, S.I. Roumeliotis, J.W. Burdick: “SC-KF Mobile Robot Localization: A Stochastic Cloning-Kalman Filter for Processing Relative-State Measurements,” *IEEE Transactions on Robotics*, 23(4), pp. 717-730, August 2007.

J5. A.I. Mourikis, N. Trawny, S.I. Roumeliotis, D.M. Helmick, L.H. Matthies: “Autonomous Stair Climbing for Tracked Vehicles,” *International Journal of Computer Vision & International Journal of Robotics Research - Joint Special Issue on Vision and Robotics*, 26(7), pp. 737-758, July 2007.

J4. N. Trawny, A.I. Mourikis, S.I. Roumeliotis, A.E. Johnson, J. Montgomery: “Vision-Aided Inertial Navigation for Pin-Point Landing using Observations of Mapped Landmarks,” *Journal of Field Robotics - Special Issue on Space Robotics*, 24(5), pp. 357-378, April 2007.

J3. A.I. Mourikis, S.I. Roumeliotis: “Predicting the Performance of Cooperative Simultaneous Localization and Mapping (C-SLAM),” invited paper to the *International Journal of Robotics Research*, 25(12), pp. 1273-1286, December 2006.

J2. A.I. Mourikis, S.I. Roumeliotis: “Optimal Sensor Scheduling for Resource-Constrained Localization of Mobile Robot Formations,” *IEEE Transactions on Robotics*, 22(5), pp. 917-931, October 2006.

J1. A.I. Mourikis, S.I. Roumeliotis: “Performance Analysis of Multirobot Cooperative Localization,” *IEEE Transactions on Robotics* 22(4), pp. 666-681, August 2006.

CONFERENCE PAPERS

C39. H. Yu, A.I. Mourikis, “Edge-based Visual-inertial Odometry,” Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vancouver, BC, Canada, September 2017 (to appear).

C38. X. Zheng, Z. Moratto, M. Li, A.I. Mourikis, “Photometric Patch-based Visual-Inertial Odometry,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Singapore, May 2017.

C37. S. Zhang, A.I. Mourikis, “Distributed Estimation for Sensor Networks with Arbitrary Topologies,” Proceedings of the American Control Conference (ACC), Boston, MA, July 2016, pp. 7048-7054.

C36. H. Yu, A.I. Mourikis, “Vision-aided inertial navigation with line features and a rolling-shutter camera,” Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hamburg, Germany, October 2015, pp. 892-899.

C35. X. Zheng, M. Li, A.I. Mourikis, “Decoupled Representation of the Error and Trajectory Estimates for Efficient Pose Estimation,” Proceedings of the Robotics: Science and Systems Conference, Rome, Italy, June 2015.

C34. M. Li, A.I. Mourikis, “A Convex Formulation for Motion Estimation using Visual and Inertial Sensors,” Proceedings of the Workshop on Multi-view Geometry in Robotics, held in conjunction with RSS, Berkeley, CA, June 13, 2014.

C33. M. Li, H. Yu, X. Zheng, A.I. Mourikis, “High-Fidelity Sensor Modeling and Calibration in Vision-aided Inertial Navigation,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Hong Kong, May 31-June 7 2014, pp. 409-416. **Best vision paper award finalist.**

C32. M. Li, B.H. Kim, A.I. Mourikis, “Real-time Motion Tracking on a Cellphone using Inertial Sensing and a Rolling-Shutter Camera,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, May 2013, pp. 4697-4704.

C31. M. Li, A.I. Mourikis, “3-D Motion Estimation and Online Temporal Calibration for Camera-IMU Systems,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, May 2013, pp. 5689-5696.

C30. T.C. Dong-Si, A.I. Mourikis, “Initialization in Vision-aided Inertial Navigation with Unknown Camera-IMU Calibration,” Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vilamoura, Portugal, October 2012, pp. 1064-1071.

C29. M. Li, A.I. Mourikis, “Vision-aided inertial navigation for resource-constrained

systems,” Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vilamoura, Portugal, October 2012, pp. 1057-1063.

C28. M. Li, A.I. Mourikis, “Optimization-based Estimator Design for Vision-Aided Inertial Navigation,” Proceedings of the Robotics: Science and Systems Conference, Sydney, Australia, July 2012, pp. 241-248.

C27. M. Li, A.I. Mourikis, “Improving the Accuracy of EKF-based Visual-Inertial Odometry,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), St. Paul, MN, May 2012, pp. 828-835.

C26. T.C. Dong-Si, A.I. Mourikis, “Consistency Analysis for Sliding-Window Visual Odometry,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), St. Paul, MN, May 2012, pp. 5202-5209.

C25. G.P. Huang, A.I. Mourikis, and S.I. Roumeliotis, “An Observability-Constrained Sliding Window Filter for SLAM”, Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco, CA, Sept. 23-25, 2011, pp. 65-72.

C24. T.C. Dong-Si, A.I. Mourikis, “Motion Tracking with Fixed-lag Smoothing: Algorithm and Consistency Analysis,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Shanghai, China, May 9-13 2011, pp. 5655-5662.

C23. T. Yap, M. Li, A.I. Mourikis, C.R. Shelton, “A Particle Filter for Monocular Vision-Aided Odometry,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Shanghai, China, May 9-13 2011, pp. 5663-5669.

C22. J. Hesch, A.I. Mourikis, S.I. Roumeliotis: “Extrinsic Camera Calibration Using Mirror Reflections,” Proceedings of the European Conference on Computer Vision (ECCV), Hersonnissos, Greece, Sept. 2010.

C21. S. Yang, B. Bhanu, A.I. Mourikis: “Error Model for Scene Reconstruction from Motion and Stereo,” Proceedings of the Workshop on Three Dimensional Information Extraction for Video Analysis and Mining, held in conjunction with CVPR, San Francisco, CA, June 14, 2010.

C20. G. Huang, A.I. Mourikis, S.I. Roumeliotis: “On the Consistency of Multi-robot Cooperative Localization,” Proceedings of the Robotics: Science and Systems Conference, Seattle, WA, June 28-July 1, 2009. **Best paper award finalist.**

C19. G. Huang, A.I. Mourikis, S.I. Roumeliotis: “On the Complexity and Consistency of UKF-based SLAM,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Kobe, Japan, May 12-17 2009, pp. 4401-4408.

C18. J. Hesch, A.I. Mourikis, S.I. Roumeliotis: “Mirror-Based Extrinsic Camera Calibration,” Proceedings of the Workshop on the Algorithmic Foundations of Robotics (WAFR), Guanajuato, Mexico, December 7-9, 2008.

C17. J. Hesch, A.I. Mourikis, S.I. Roumeliotis: “Determining the Camera to Robot-body Transformation from Planar Mirror Reflections,” Proceedings of the IEEE/RSJ Interna-

tional Conference on Intelligent Robots and Systems (IROS), Nice, France, September 22-26 2008, pp. 3865-3871.

C16. G. Huang, A.I. Mourikis, S.I. Roumeliotis: “A First-Estimates Jacobian EKF for Improving SLAM Consistency,” Proceedings of the 11th International Symposium on Experimental Robotics (ISER), Athens, Greece, July 14-17, 2008. **Selected for journal publication, International Journal of Robotics Research.**

C15. A.I. Mourikis, S.I. Roumeliotis: “A Dual-layer Estimator Architecture for Long-term Localization,” Workshop on Visual Localization for Mobile Platforms, held in conjunction with CVPR, Anchorage, AL, June 28, 2008.

C14. G. Huang, A.I. Mourikis, S.I. Roumeliotis: “Analysis and Improvement of the Consistency of Extended Kalman Filter-Based SLAM,” IEEE International Conference on Robotics and Automation (ICRA), Pasadena, CA, May 19-23, 2008, pp. 473-479.

C13. A.I. Mourikis, N. Trawny, S.I. Roumeliotis, A.E. Johnson, and L.H. Matthies: “Vision-Aided Inertial Navigation for Precise Planetary Landing: Analysis and Experiments,” Proceedings of the Robotics: Science and Systems Conference, Atlanta, GA, June 26-30, 2007, pp 158-165.

C12. N. Trawny, A.I. Mourikis, S.I. Roumeliotis, A. Johnson, J. Montgomery, A. Ansar, and L. Matthies, “Coupled Vision and Inertial Navigation for Pin-Point Landing,” Proceedings of the NASA Science Technology Conference (NSTC’07), College Park, MD, June 19-21, 2007.

C11. A.E. Johnson, A. Ansar, L.H. Matthies, N. Trawny, A.I. Mourikis, S.I. Roumeliotis: “A General Approach to Terrain-Relative Navigation for Planetary Landing,” Proceedings of the AIAA Infotech@Aerospace Conference, AIAA 2007-28541, Rohnert Park, May 7-10 2007.

C10. A.I. Mourikis, S.I. Roumeliotis: “A Multi-state Constraint Kalman Filter for Vision-Aided Inertial Navigation,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Rome, Italy, April 10-14 2007, pp. 3565-3572.

C9. F.M. Mirzaei, A.I. Mourikis, S.I. Roumeliotis: “On the Performance of Multi-robot Target Tracking,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Rome, Italy, April 10-14 2007, pp. 3482-3489.

C8. A.I. Mourikis, S.I. Roumeliotis: “Analytical Characterization of the Accuracy of SLAM without Absolute Orientation Measurements,” Proceedings of the Robotics: Science and Systems Conference, Philadelphia, PA, August 16-19, 2006, pp. 215-222.

C7. A.I. Mourikis, S.I. Roumeliotis: “On the Treatment of Relative-Pose Measurements for Mobile Robot Localization,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2006, Orlando, FL, May 15-19, pp. 2277-2284.

C6. A.I. Mourikis, S.I. Roumeliotis: “Performance Bounds for Cooperative Simultaneous Localization and Mapping (C-SLAM),” Proceedings of the Robotics: Science and Systems Conference, Boston, MA, June 8-11, 2005, pp. 73-80. **Selected for journal publication, International Journal of Robotics Research.**

C5. A.I. Mourikis, S.I. Roumeliotis: “Optimal Sensing Strategies for Mobile Robot Formations: Resource-Constrained Localization,” Proceedings of the Robotics: Science and Systems Conference, Boston, MA, June 8-11, 2005, pp. 281-288.

C4. Y.S. Hidaka, A.I. Mourikis, S.I. Roumeliotis: “Optimal Formations for Cooperative Localization of Mobile Robots,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), Barcelona, Spain, April 18-22, 2005, pp. 4137-4142.

C3. A.I. Mourikis, S.I. Roumeliotis: “Analysis of Positioning Uncertainty in Simultaneous Localization and Mapping (SLAM),” Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Sendai, Japan, September 28 - October 2, 2004, pp. 13-20.

C2. A.I. Mourikis, A. Tzes: “Implementation of Identification Algorithms in Systems with Reduced Computational Resources,” Proceedings of the IEEE-CSS 12th Mediterranean Conference on Control and Automation, Kusadasi, Turkey, June 6-9 2004.

C1. A.I. Mourikis, S.I. Roumeliotis: “Analysis of Positioning Uncertainty in Reconfigurable Networks of Heterogeneous Mobile Robots,” Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), New Orleans, LA, April 26-May 1, 2004, pp. 572-579.

**PATENT
APPLICATIONS**

P5. A.I. Mourikis, M. Li, “Method for Motion Estimation with a Scanning Camera,” US Provisional Patent Application #61/857,922, 2013.

P4. A.I. Mourikis, “Method for Processing Feature Measurements in Vision-Aided Inertial Navigation,” US Provisional Patent Application #61/857,583, 2013.

P3. M. Li, A.I. Mourikis, “3D-Motion Estimation and Online Temporal Calibration for Camera-IMU Systems,” US Provisional Patent Application #61/857,591, 2013.

P2. M. Li, A.I. Mourikis, “Real-Time Pose Estimation System Using Inertial and Feature Measurements,” US Provisional Patent Application #61/824,309, 2013.

P1. S.I. Roumeliotis, A.I. Mourikis, “Vision-aided Inertial Navigation,” US Patent Application #12/383,371, 2009.
