

Publications

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Published works

- Buttrey, S., **Chung, T.H.**, Eagle, J., and Temple Lang, D.W.T. (2015) Processing Robot and Sensor Log Files: Seeking a Circular Target. In Nolan and Temple Lang (Ed.), *Case Studies in Data Science in R*. Boca Raton, FL: Taylor & Francis. (*In press*)
- **Chung, T.H.** and Silvestrini, R.T. Modeling and Analysis of Exhaustive Probabilistic Search. *Naval Research Logistics*. Volume 61, Issue 2, pages 164–178, March 2014
- Carpin, S., Burch, D., Basilio, N., **Chung, T.H.**, and Kölsch, M. "Variable Resolution Search with Quadrotors: Theory and Practice," *Journal of Field Robotics*. Vol. 30, no. 5, pp. 685–701, Sep. 2013.
- **Chung, T.H.**, Jones, K.D., Day, M.A., Jones, M., and Clement, M. 50 VS. 50 by 2015: Swarm Vs. Swarm UAV Live-Fly Competition at the Naval Postgraduate School. AUVSI North America, Washington, D.C., August 12-15, 2013
- Dono, T.F. and **Chung, T.H.** Optimized Transit Planning and Landing of Aerial Robotic Swarms. 2013 IEEE International Conference on Robotics and Automation, Karlsruhe, Germany. 2013.
- Stevens, T. and **Chung, T.H.** Autonomous Search and Counter-Detection using Levy Search Models. 2013 IEEE International Conference on Robotics and Automation, Karlsruhe, Germany. 2013.
- Carpin, S., **Chung, T.H.**, and Sadler, B. Theoretical Foundations of High-Speed Robot Team Deployment. 2013 IEEE International Conference on Robotics and Automation, Karlsruhe, Germany. 2013.
- Lin, K. Y., Atkinson, M. P., **Chung, T. H.**, and Glazebrook, K. D. (2013). A Graph Patrol Problem with Random Attack Times. *Operations Research*, 61(3), 694-710.
- Muratore, M. Silvestrini, R.T., and **Chung, T.H.**. Simulation Analysis of UAV and Ground Teams for Surveillance and Interdiction. (2012) *The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, Journal of Defense Modeling and Simulation. Vol 11, No 2, April 2014, pages 125-136.
- Yang, J.H., Kapolka, M., and **Chung, T.H.** Autonomy balancing in a manned-unmanned teaming (MUT) swarm attack. *2012 International Conference on Robot Intelligence Technology and Applications*. Gwangju, Korea, December 16-18, 2012.
- Yakimenko, O.A., and **Chung, T.H.**, "Extending Autonomy Capabilities for Unmanned Systems with CRUSER," Proceedings of the 28th Congress of the International Council of the Aeronautical Sciences (ICAS 2012), Brisbane, Australia, September 23-28, 2012.
- Yau, J. and **Chung, T.H.** Search-theoretic and Ocean Models for Localizing Drifting Objects. *2012 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Algarve, Portugal, October 7-12, 2012.
- **Chung, T. H.** and Burdick, J. W. (2012). Analysis of Search Decision Making Using Probabilistic Search Strategies. *IEEE Transactions on Robotics*, 28(1), 132-144.
- **Chung, T. H.**, Hollinger, G. A., and Isler, V. (2011). Search and Pursuit-Evasion in Mobile Robotics: A Survey. *Autonomous Robots, Special Issue on Search and Pursuit/Evasion with Mobile Robots*, 31(4), 299-316. Springer Netherlands.
- Ma, J., **Chung, T. H.**, and Burdick, J. (2011). A Probabilistic Framework for Object Search with 6-DOF Pose Estimation. *The International Journal of Robotics Research, Special Issue on Semantic Perception for Robots in Indoor Environments*, 30(10), 1209-1228.
- Carpin, S., Burch, D., and **Chung, T. H.** (2011). Searching for Multiple Targets using Probabilistic Quadrees. *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (pp. 4536-4543). San Francisco, CA: IEEE.
- **Chung, T. H.**, and Carpin, S. (2011). Multiscale Search using Probabilistic Quadrees. *2011 IEEE International Conference on Robotics and Automation* (pp. 2546-2553). Shanghai, China: IEEE.
- Jones, K. D., Dobrokhodov, V., Kaminer, I., **Chung, T. H.**, Clement, M. R., Kolsch, M., and Zaborowski, R. (2011). Cooperative Autonomy for the Masses - Fundamental Steps Toward Enabling Complex Multi-Asset Missions with Simple Point-and-Click Tasking. *Proceedings of AUVSI Unmanned Systems North America 2011*. Washington, D.C.
- Klaus, C., and **Chung, T. H.** (2011). Optimized Graph Topologies for Probabilistic Search. *2011 IEEE International Conference on Decision and Control*. Orlando, Florida.
- Kenneth L. Byers, **Timothy H. Chung**, and Rachel T. Johnson. " *Modeling and Analysis of Tactical Installation Protection Missions* ." Proceedings of the Winter Simulation Conference. Baltimore, Maryland, 2010.
- Matthew Hasting, **Timothy H. Chung**, and Paul Evangelista. " *Experimentation and Modeling of Soldier Target Search* ." Proceedings of the International Conference on Industrial Engineering, Theory, Applications, and Practice. Anaheim, California, 2009.
- **Timothy H. Chung**, M. Kress, and J.O. Roysset, " *Probabilistic Search Optimization and Mission Assignment for Heterogeneous Autonomous Agents* ," 2009 IEEE International Conference on Robotics and Automation, Kobe, Japan. 2009.
- **Timothy H. Chung**, " *On Probabilistic Search Decisions under Searcher Motion Constraints* ," 2008 Workshop on Algorithmic Foundations of Robotics, Guanajuato, Mexico. 2008.
- **Timothy H. Chung** and Joel W. Burdick, " *Multi-agent Probabilistic Search in a Sequential Decision-theoretic Framework* ," 2008 IEEE International Conference on Robotics and Automation, Pasadena, California. 2008.
- **Timothy H. Chung** and Joel W. Burdick. *A Decision-Making Framework for Control Strategies in Probabilistic Search* . In Proc. of IEEE Intl. Conference on Robotics and Automation, 2007.
- **Timothy H. Chung**, Joel W. Burdick, and Richard M. Murray. *A Decentralized Motion Coordination Strategy for Dynamic Target Tracking* . In Proc. of IEEE Intl. Conference on Robotics and Automation, May 2006.
- Vijay Gupta, **Timothy H. Chung**, Babak Hassibi, and Richard M. Murray. *On a Stochastic Sensor Selection Algorithm with Applications in Sensor Scheduling and Dynamic Sensor Coverage* . Automatica, 42(2):251-260, February 2006.
- Vijay Gupta, **Timothy H. Chung**, Babak Hassibi, and Richard M. Murray. *On a Stochastic Algorithm for Sensor Scheduling* . In Proceedings of the 16th IFAC World Congress, Prague, Czech Republic, July 2005.
- Yasamin Mostofi, **Timothy H. Chung**, Richard M. Murray, and Joel W. Burdick. *Communication and Sensing Trade-Offs in Decentralized Mobile Sensor Networks: A Cross-Layer Design Approach* . In Intl. Conf. on Information Processing in Sensor Networks, 2005.
- **Timothy H. Chung**, Vijay Gupta, Joel W. Burdick, and Richard M. Murray. *On a Decentralized Active Sensing Strategy using Mobile Sensor Platforms in a Network* . In Proc. of the IEEE Conf. on Decision and Control, Paradise Island, Bahamas, December 2004.
- Vijay Gupta, **Timothy H. Chung**, Babak Hassibi, and Richard M. Murray. *Sensor Scheduling Algorithms Requiring Limited Computation* . In Proc. of IEEE Conf. on Acoustics, Speech and Signal Processing, Toronto, Canada, pages 825-828, May 2004.
- **Timothy H. Chung**, Vijay Gupta, Babak Hassibi, Joel W. Burdick, and Richard M. Murray. *Scheduling for Distributed Sensor Networks with Single Sensor Measurement Per Time Step* . In Proc. of IEEE Conf. on Robotics and Automation, New Orleans, LA, pages 187-192, April 2004.

- **Timothy H. Chung**, L. Cremean, W. Dunbar, Z. Jin, E. Klavins, D. Moore, A. Tiwari, D. van Gogh, and S. Waydo. *A Platform for Cooperative and Coordinated Control of Multiple Vehicles: The Caltech Multi-Vehicle Wireless Testbed*. In Proc. of the Conference on Cooperative Control and Optimization, December 2002.

Other publications

- Brutzman, D., **Chung, T.H.**, O'Neal, C., Ellis, J. and Englehorn, L. (2011). *Future Unmanned Naval Systems Wargame Competition Final Report*, NPS Technical Report NPS-USW-2011-001 released July 2011.

Recent presentations

- Naval Undersea Warfare Command (NUWC) Site Visit, NPS. December, 2010
 - Guests: Dr. Pierre Corriveau, the Chief Technology Officer; Mr. Jim Griffin, Autonomous and Defensive Systems Department Head; Mr. Bob Manke, Strategic Assessment Analyst in the Office of Undersea Warfare; and Mr. John Burwell from the Keyport Division of NUWC
- NPS Systems Engineering department seminar, NPS. October 2010
- Monterey Bay Aquarium Research Institute (MBARI), Moss Landing, CA. August, 2010
 - POC: Dr. Kanna Rajan, Researcher for Autonomy
- Military Operations Research Society Symposium, Quantico, VA. June, 2010
 - Key lecture at invited session on unmanned vehicles
- UC Merced, Electrical and Computer Engineering department seminar, Merced, CA. April, 2010
- Johns Hopkins Applied Physics University, Laurel, MD. March, 2010
- USMC Operations Analysis Division, Quantico, VA. June, 2009
- OPNAV N81, Pentagon, Washington, DC. June, 2009
- IEEE Int'l. Conf. on Robotics and Automation, Kobe, Japan. May, 2009
- UC Berkeley, Industrial Engineering and Operations Research department seminar, Berkeley, CA. April, 2009