2013 CITR Publications

Journal papers and book chapters that appeared in 2013

- Kurt, A., Ozguner, U. (2013) "Hierarchical Finite State Machines for Autonomous Mobile Systems", in the *International Federation of Automatic Control Journal of Control Engineering Practice*, Volume 21, Issue 2, February 2013, Pages 184–194.
- Kurt, A., Vernier, M., Biddlestone, S., Redmill, K., Ozguner, U. (2013) "Testing of Intelligent Vehicles Using Virtual Environments and Staged Scenarios," *Advances in Intelligent Vehicles*, Ed. Chen, Y. and Li, L., Academic Press. December 2013.
- Gadepally, V.; Krishnamurthy, A.; Ozguner, U., "A Framework for Estimating Driver Decisions Near Intersections," *Intelligent Transportation Systems, IEEE Transactions on*, no.99, pp.1,5. November 2013.

Conference papers that appeared in 2013

- Adamey, E., Kurt, A., Ozguner, U. (2013, September). "Agent-Based Passenger Modeling for Intelligent Public Transportation," *Intelligent Transportation Systems (ITSC), 2013 16th International IEEE Conference on*. The Hague, The Netherlands.
- Adamey, E., Kurt, A., Ozguner, U. (2013, September) "Cooperative Traffic Mapping Using Onboard Sensing and V2V Communication in Mixed-Traffic Environments," In *Second International Symposium on Future Active Safety Technology*. *FAST-zero `13*. Nagoya, Japan.
- Kurt, A., Redmill, K., & Ozguner, U. (2013, April) "Coordinated autonomous driving with 100 connected vehicles," In *Proceedings of the ACM/IEEE 4th International Conference on Cyber-Physical Systems* (pp. 244-244). ACM.
- Park, J., Kurt, A., Ozguner, U. (2013, April) "A game theoretic approach to controller design for cyber-physical systems: Collision avoidance," In *Cyber-Physical Systems (ICCPS), 2013 ACM/IEEE International Conference on* (pp. 254-254). IEEE.
- Pardis Khayyer, Ümit Özgüner, Orhan Alankus, "A Study on Bus Convoy Energy Consumption using Monte Carlo Analysis," *IEEE Industrial Electronics Conference*, IECON 2013, pp.4346-4350, 10-13 November 2013, Vienna, Austria.
- Pardis Khayyer and Ümit Özgüner, "Decentralized Control of Smart Grids with Fixed and Moving Loads," *IEEE Power and Energy Conference* at Illinois (PECI) 2013, 22-23 February 2013, Urbana-Champagne, IL, USA.
- Yetkin, H., & Ozguner, U. (2013, June). Stabilizing control of an autonomous bicycle. In *Control Conference (ASCC), 2013 9th Asian* (pp. 1-6). IEEE.
- Ozatay, E., Ozguner, U., Filev, D., Michelini, J., "Analytical and Numerical Solutions for Energy Minimization of Road Vehicles with the Existence of Multiple Traffic Lights", 52nd IEEE Control and Decision Conference, Florence, Italy, Dec., 2013.

Journal papers accepted but not yet appeared

- Park, J., Kurt, A., Ozguner, U. (2014, to appear) "Hybrid Systems Modeling and Reachability-Based Controller Design Methods for Vehicular Automation," *Journal of Unmanned Systems,* accepted for publication.

Journal papers submitted or resubmitted

- Kurt, A., Ozguner, U. *"*Discrete-State Encoding in Hybrid-State Systems for Intelligent Vehicle Control and Estimation,*"* submitted to *IEEE Transactions on Intelligent Transportation Systems*.
- Kurt, A., Ozguner, U. *"*Probabilistic Modeling, Estimation and Prediction of Hybrid-State Systems for Driver-Vehicle Interactions,*"* submitted to *IEEE Transactions on Intelligent Transportation Systems*.
- Pardis Khayyer and Ümit Özgüner, "Decentralized Control of Large-Scale Storage-Based Renewable Energy Systems," Extended Abstract Accepted to IEEE *Transactions on Smart Grid special issue on Energy Storage Applications for Smart Grid*, Full Paper Submitted, under review, 2013.
- Pardis Khayyer and Ümit Özgüner, "Multiple-Model Adaptive Control of Uncertain Large-Scale Interconnected Systems," *Automatica (A Journal of IFAC)*, Submitted, under review, 2013.
- Ozatay, E., Simona, O., Wollaeger, J., Ozguner, U., Rizzoni, G., Filev, D., Michelini, J., Di Cairano, S. "Cloud-Based Velocity Profile Optimization for Everyday Driving: A Dynamic Programming Based Approach", IEEE *Transactions on Intelligent Transportation Systems*, *Under Review*.

Conference papers submitted but not yet accepted

- Pardis Khayyer and Ümit Özgüner, "Model Based Estimation of Large-Scale Interconnected Power Systems with Moving PHEV Loads," submitted in November 2013 to the *19th IFAC World Congress*, (IFAC WC 2014).
- Ozatay, E., Ozguner, U., Filev, D., Michelini, J., "Analytical Solution to the Minimum Energy Consumption Based Velocity Profile Optimization Problem with Variable Road Grade", *19th IFAC World Congress*, Cape Town, S. Africa, *Under Review*.
- H. Yetkin, S. Kalouche, M. Vernier, G. Colvin, K. Redmill and U. Ozguner. "Gyroscopic stabilization of an unmanned bicycle," submitted to *American Control Conference (ACC), 2014.*
- Meng-Bi Cheng, Wu-Chung Su, Verica Radisavljevic, and Umit Ozguner, "A Lyapunov Approach to Second-Order Sliding-Mode Boundary Control of an Unstable Heat System with Spatiotemporal-Varying Parameters under Boundary Disturbance", submitted to 2014 American Control Conference, which will be held in Portland, Oregon, USA. June 4-6, 2014.
- Meng-Bi Cheng, Wu-Chung Su, Verica Radisavljevic, and Umit Ozguner, ``Sliding Surface Design of Special Class Partial Differential Systems with Boundary Actuators and Matched Disturbances Using a Lyapunov Approach'' submitted to 2014 IEEE Intelligent Vehicles Symposium (IV'14).

Theses

- Khayyer, P. (2013). *Multiple Model Based Estimation and Control in Large-Scale Interconnected Systems.* Ph.D. Dissertation, Ohio State University, Electrical and Computer Engineering.
- Gadepally, V. (2013). *Estimation of Driver Behavior for Autonomous Vehicle Applications.* Ph.D. Dissertation, Ohio State University, Electrical and Computer Engineering.
- Biddlestone, S. (2013). *Collaborative Motion for Mobile Platforms.* Ph.D. Dissertation, Ohio State University, Electrical and Computer Engineering.
- Park, J. (2013). *Safe Controller Design for Intelligent Transportation System Applications using Reachability Analysis.* Master of Science Thesis, Ohio State University, Electrical and Computer Engineering.
- Yetkin, H. (2013). *Stabilization of Autonomous Bicycle.* Master of Science Thesis, Ohio State University, Electrical and Computer Engineering.