Yusuf Bugra Erol

Contact Information

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Education

University of California, Berkeley, Berkeley, CA

PhD Student, Electrical Engineering and Computer Science,
August 2011 to present

- Advisor: Stuart J. Russell
- Passed the preliminary examination in signal processing
- Passed the qualifying exam and advanced to candidacy

Middle East Technical University, Ankara, Turkey

B.S., Electrical and Electronics Engineering, June 2011

- GPA: 4.00/4.00
- Emphasis on control and telecommunications

Research Interests

Statistical inference, statistical signal processing, MCMC, sequential Monte Carlo, approximate Bayesian inference, system identification, semi-empirical modeling via Gaussian processes/latent force models

Current Projects

- Developing an efficient online Monte Carlo based algorithm for static parameter estimation in nonlinear/non-Gaussian state space models
- State and parameter estimation of intracranial hemodynamics for traumatic brain injury (TBI) patients in intensive care units (ICU)
- Robust heart beat detection using multimodal data (ECG, PPG, ABP etc.)

Publications

[1] **Yusuf B. Erol**, Lei Li, Bharath Ramsundar, Stuart J. Russell "The Extended Parameter Filter," *Proceedings of the 30th International Conference on Machine Learning (ICML)*, Atlanta, Georgia, USA, June 2013.

[2] **Yusuf B. Erol**, Yi Wu, Lei Li, Stuart Russell, "Towards Practical Bayesian Parameter and State Estimation ", arXiv-preprint

[3] **Yusuf B. Erol**, Stuart J. Russell, Ahilan Sivaganesan, Geoffrey T. Manley "Combined State and Parameter Estimation of Human Intracranial Hemodynamics," *Machine Learning for Clinical Data Analysis and Healthcare, NIPS*, Lake Tahoe, California, USA, December 2013.

[4] Quan Ding, Yong Bai, **Yusuf Erol**, Rebeca Salas-Boni, Xiaorong Zhang and Xiao Hu "Multimodal Information Fusion for Robust Heart Beat Detection," *Computers in Cardiology*, PhysioNet Challenge, 2014

[5] **Yusuf Erol**, Romi Phadte, Sammy Sidhu, Claire Asselstine, David Phillips, Stuart Russell "Model Based Probabilistic Inference for Intensive Care Medicine," *Meaningful Use of Complex Medical Data (MUCMD)*, Los Angeles, CA, August 2015

[6] Hugh Chen, **Yusuf Erol**, Eric Shen, Stuart Russell, "Probabilistic Model-Based Approach for Heart Beat Detection", arXiv-preprint, December 2015

[7] Fabien Chraim, **Yusuf Erol**, Kris Pister "Wireless Gas Leak Detection and Localization, " IEEE Transactions on Industrial Informatics, February 2015

[8] C. Candan, **Y.B. Erol**, "Conjugate directions based order recursive implementation of post-Doppler adaptive target detectors," *IET Radar, Sonar and Navigation*, vol.6, no.7, pp.577-586, August 2012.

Software Skills

Programming:
- Matlab, Lisp, Python, C

Operating Systems:
- OS X, Unix, Windows

Relevant Course Work

- CS281A - Statistical Learning Theory
- EE223 - Stochastic Systems: Estimation and Control
- EE225 - Statistical Signal Processing
- EE226A - Random Processes in Systems
- EE226B - Random Processes II
- EE227A - Optimization Models in Engineering
- MATH224A/B - Mathematical Methods for the Physical Sciences

Teaching Experience

- EE120, Fall 2015 - Signals and Systems
- EE20, Spring 2015 - Structure and Interpretation of Signals and Systems