

Sang Min Oh

Research Interests

Statistical approaches to Machine Perception. Areas of interests include computer vision, robotic perception, behavior recognition, tracking, motion synthesis and control.

Education

- Computer Science Ph.D student, Georgia Institute of Technology, since 2003 Fall.
Advisers : Dr. Frank Dellaert and Dr. James M. Rehg
- B.S. in Computer Science with *cum laude*, Seoul National University, Korea 2003.

Awards

- Samsung Lee Kun Hee Scholarship Fellow, Fall 2003 - Spring 2007.
- Highest Honors with full scholarship 2001-2003, Seoul National University, Korea.
- Dean's List 2000-2003, Seoul National University, Korea.

Employment History

- Research Assistant/Independent Research, Georgia Tech, 2003-current.
- Research Intern, Microsoft Research, Redmond, 2007 Summer.
Mentor : Dr. Nebojsa Jojic.
- Research Intern, Microsoft Research, Redmond, 2006 Summer.
Mentors : Dr. Cha Zhang and Dr. Paul Viola.
- Software Engineer at Daewoo Design Laboratory, Seoul, Korea, 2001.
- Service at Republic of Korea Navy, Jinhae, Korea, 1997 - 1999.

Research Experience (in chronological order, see related publications below)

Topics : Learning and inference in time-series models, tracking using GPS data, Monte-Carlo methods (MCMC and particle filtering), on-line non-parametric learning, robotic vision.

- Switching Linear Dynamic Systems and extensions with applications in BioTracking.
Related publications : AAAI 2005, ICCV 2005, CVPR 2006, IJCV 2007
Adviser : Dr. Dellaert and Dr. Rehg.
- Robot perception for autonomous navigation in unstructured outdoor environment.
Related publications : ICRA 2006, IROS 2007
Adviser : Dr. Dellaert and Dr. Rehg.
- Vision-based BioTracking project.
Related publications : CVPR 2005
Adviser : Dr. Dellaert
- Assisting technology for the visually impaired.
Related publications : IROS 2004
Adviser : Dr. Dellaert

Publications

Journal Papers

- **Learning and Inferring Motion Patterns using Parametric Segmental Switching Linear Dynamic Systems**, Sang Min Oh and James M. Rehg and Tucker Balch and Frank Dellaert, in International Journal of Computer Vision (IJCV) Special Issue on Learning for Vision, 2007 (IJCV 2007).

Conference Papers

- **Traversability Classification for UGV Navigation** : A Comparison of Patch and Superpixel Representation, in Proceedings of 2007 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2007).
- **Parameterized duration modeling for switching linear dynamic systems**, Sang Min Oh, James M. Rehg, and Frank Dellaert, in Proceedings of 2006 IEEE International Conference on Computer Vision and Pattern Recognition (CVPR 2006).
- **Traversability classification using unsupervised on-line visual learning for outdoor robot navigation**, Dongshin Kim, Jie Sun, Sang Min Oh, James M. Rehg, and Aaron F. Bobick, in Proceedings of 2006 IEEE International Conference on Robotics and Automation (ICRA 2006).
- **Learning and Inference in Parametric Switching Linear Dynamical Systems**, Sang Min Oh, James M. Rehg, Tucker Balch, and Frank Dellaert, in Proceedings of IEEE International Conference on Computer Vision (ICCV 2005).
- **Data-Driven MCMC for Learning and Inference in Switching Linear Dynamic Systems**, Sang Min Oh, James M. Rehg, Tucker Balch, and Frank Dellaert, Proceedings of Twentieth National Conference on Artificial Intelligence (AAAI 2005).
- **Mixture Trees for Modeling and Fast Conditional Sampling with Applications in Vision and Graphics**, Frank Dellaert, Vivek Kwatra, and Sang Min Oh, in Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition (CVPR 2005).
- **Map-Based Priors for Localization**, Sang Min Oh, Sarah Tariq, Bruce Walker, and Frank Dellaert, in Proceedings of IEEE/RSJ International Conference on Intelligent Robotics and Systems (IROS 2004).

Workshop Presentations and Technical Reports

- **Automatic Acquisition of 4D Urban Models and Proactive Auditory Service for Enhanced User Experience**, Sang Min Oh, Grant Schindler, Frank Dellaert, Bruce N. Walker, Jefferey Lindsay, in Proceedings of Young Investigators Forum in Culture and Technology (2006).
- **On-line Learning of the Traversability of Unstructured Terrain for Outdoor Robot Navigation**, Sang Min Oh, James M. Rehg, and Frank Dellaert, in Proceedings of 2006 Snowbird Learning Workshop, Salt Lake City, Utah, USA.
- **Learning and Inferring Motion Patterns using Parametric Segmental Switching Linear Dynamic Systems**, Sang Min Oh, James M. Rehg, Tucker Balch, and Frank Dellaert, Georgia Tech GVU Report GIT-GVU-06-02 (2006).
- **Segmental Switching Linear Dynamic Systems**, Sang Min Oh, James M. Rehg, and Frank Dellaert, Georgia Tech CoC Report GIT-CC-05-13 (2005).
- **A Variational inference method for Switching Linear Dynamic Systems**, Sang Min Oh, Ananth Ranganathan, James M. Rehg, and Frank Dellaert, Georgia Tech GVU Report GIT-GVU-05-16 (2005).

Memberships

- AAI student member, IEEE student member.

Contact Information

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