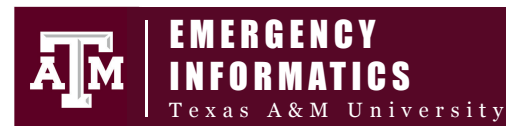


SSRR 2012

10th IEEE International Symposium on Safety Security and Rescue Robotics
Nov 5-8, 2012 College Station, Texas

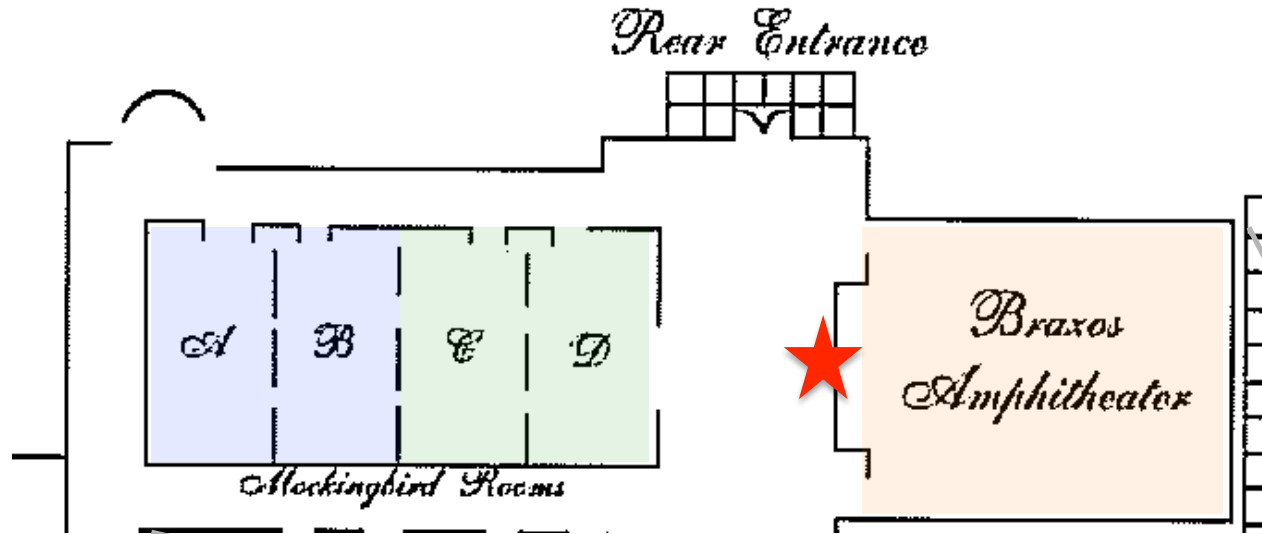
Complete Schedule and Maps

- Map of conference venue
- Schedule at a glance
- Schedules by day
- List of posters

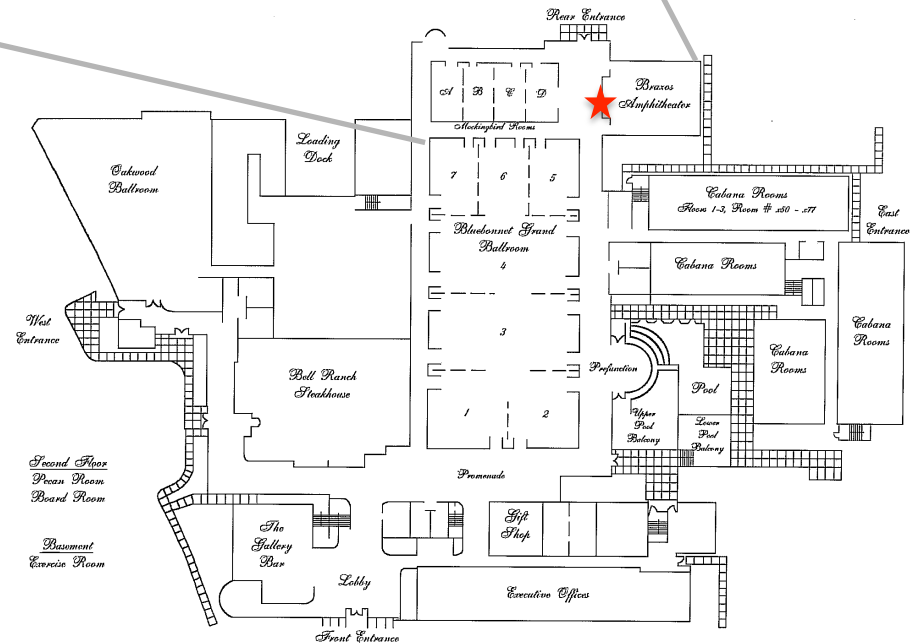


SSRR 2012 is sponsored by the IEEE Robotics and Automation Society, the Center for Robot-Assisted Search and Rescue, and the Center for Emergency Informatics/EDGE[®] Innovation Network. Special thanks to the Texas A&M Engineering Extension Service.

SSRR 2012: LAYOUT OF CONFERENCE SPACE



- ★ **Registration and help desk area**
 - Poster session, refreshments
- **Brazos Amphitheater**
 - Keynotes
 - Session 4
- **Mockingbird A/B**
 - Sessions 1A, 2A, 3A, 5A, 6A, 7A
- **Mockingbird C/D**
 - Sessions 1B, 2B, 3B, 5B, 6B, 7B



Schedule at a Glance

| | Sun 4-Nov | Monday 5-Nov | Tuesday 6-Nov | Wednesday 7-Nov | Thursday 8-Nov | | | | | | | | |
|----------|--|--|------------------|---|-------------------|--|--|---|--|------------------------------------|--|--|--|
| 9:00 AM | no-host welcome reception (meet in Hilton lobby, walk to restaurant) | Keynote: Tadokoro | | Keynote: Asama | | Keynote: Voyles | | Tutorial: Autonomy (Kleiner) | | | | | |
| 10:00 AM | | break with refreshments | | | | break with refreshments | | | | | | | |
| 10:20 AM | | S1A Urban Search and Rescue and Field Tests | | S1B Multi-agent coordination I | | Tour of Disaster City, Brayton Fire Fields, Emergency Operations Training Center | | S5A: Snake-like robots | | S5B: Unmanned Aerial Vehicles | | | |
| 10:30 AM | | | | | | | | | | | | break | |
| 10:45 AM | | | | | | | | | | | | Tutorial: Where Robots Have Been Used and Lessons Learned (Murphy, Tadokoro) | |
| 12:00 PM | | lunch on own (1h15min) | | BBQ Lunch | | | | lunch on own (1h15min) | | | | | |
| 12:15 PM | | | | TEEX: Overview of Disasters NIST Response Robots | | | | | | No host farewell lunch | | | |
| 1:30 AM | | S2A Navigation and Mapping | | S2B Multi-agent coordination II | | Keynote: Pratt | | S6A: Robot Platforms | | S6B: Motion Planning and Control I | | | |
| 2:00 AM | | | | | | | | | | | | | |
| 3:10 PM | | Late Breaking Report Posters with refreshments | | break with refreshments | | break with refreshments | | | | | | | |
| 3:30 AM | | | | S4: Human-Robot Interaction I (invited) | | S7A: Human Robot Interaction II | | S7B: Motion Planning and Control II | | | | | |
| 3:45 AM | | | | | | | | | | | | | |
| 4:00 AM | | | | | | | | | | | | | |
| 4:15 AM | | | | | | | | | | | | | |
| 4:30 AM | | S3A: CBR Events | | S3B: Sensing and Sensor Fusion | | Moderated Discussion: SSRR Roadmap | | | | | | | |
| 4:45 AM | | | | | | | | | | | | | |
| 5:00 AM | | | | | | | | Board bus for Tour of Texas A&M and | | | | | |
| 5:45 AM | | | | | | | | Board bus at Hilton for Library and Banquet | | | | | |
| 6:00 AM | | | | student no-host pizza dinner at Boston's | | | | Board bus at Texas A&M for Library and Tour of Presidential Library and Banquet | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 9:00 AM | | | | | | | | bus returns to Hotel | | | | | |

BY DAY: Schedule for SSRR Paper Presentations and Activities

Monday Nov. 5, 2012

| | Mockingbird A/B | Mockingbird C/D |
|-----------------|--|--|
| 9:00 AM | Keynote in Brazos Amphitheater: Tadokoro | |
| 10:00 AM | Break with Refreshments | |
| 10:20 AM | S1A: Urban Search & Rescue & Field Tests 61 Digital Gareki Archives: An Approach to Know More About Collapsed Houses for Supporting Search and Rescue Activities 63 Rescue Robots at Earthquake-Hit Mirandola, Italy: a Field Report 30 Drilling Environment for Robot Operations and Discussions on its Usages 66 CSIR Center for Mining Innovation and the Mine Safety Platform Robot | S1B: Multi-agent coordination I 37 Decision Methods for Distributed Multi-Robot Patrol 41 visual place recognition for multi-robots maps merging 58 Solving Task Allocation Uncertainty via a Combinatorial Method |
| 12:00 AM | 12:00 AM | |
| 1:30 PM | S2A: Navigation & Mapping 9 Combining Monocular and Stereo Vision in 6D-SLAM for the Localization of a Tracked Wheel Robot 13 A REference implementation of interoperable indoor location & communication systems for First REsponders: the REFIRE project 11 Safe Teleoperation of a Quadrotor Using FastSLAM 20 Interactive Mapping in 3D Using RGB-D Data | S2B: Multi-agent coordination II 49 The Effects of Communication and Visual Range on Multi-Robot Repeated Boundary Coverage 36 Multi-Robot Target Verification with Reachability Constraints 50 A Self-Adaptation Framework for Heterogeneous Miniature Search and Rescue Robots 65 Towards CSP-based mission dispatching in C2/C4I systems |
| 3:10 PM | Poster Session with Refreshments | |
| 4:30 PM | S3A: CBR Events 34 Hazardous Workspace Modeling for Manipulators Using Spatial Hazard Functions 64 Projected Needs for Robot-Assisted Chemical, Biological, Radiological, or Nuclear (CBRN) Incidents 28 Control modes validation for Generalized Point to Point Task Execution Application: Robuter/UML Mobile Manipulator | S3B: Sensing and Sensor Fusion 16 Evaluation of Thermal Imaging for People Detection in Outdoor Scenarios 2 Functional Mapping for Human-Robot Collaborative Exploration 31 GPS-INS-BARO Hybrid Navigation System Taking into Account Ground Effect for Autonomous Unmanned Helicopter |
| 5:45 PM | sessions end for day | |
| 6:00 PM | Students meet in lobby to go to Boston's Pizza | |

Posters for Late Breaking Reports

1. **A Short Overview of Recent Advances in Map Evaluation** by Sören Schwertfeger*, Andreas Birk
2. **Advances in Underwater Mapping and their Application Potential for Safety, Security, and Rescue Robotics (SSRR)** by Andreas Birk*,
3. **On Potential Security Threats Against Rescue Robotic Systems** by Howard Chizeck, Tamara Bonaci*
4. **Bluetooth as a Victim Detection Sensor** by Ahmad Byagowi*, Siavash Malektaji, Robert Donald Mcloed
5. **Consistent Decentralized Graphical SLAM with Anti-Factor Down-Dating** by Alex Cunningham*, Vadim Indelman, Frank Dellaert
6. **Establishing Network Connectivity under Rubble Using a Hybrid Wired and Wireless Approach** by Alex Ferworn*, Jimmy Tran, Alex Ufkes, Christopher Kong, Scott Herman
7. **Explosion Proof Active Scope Camera** by Justin Huff*, Richard Voyles, Satoshi Tadokoro
8. **Application Independent Supervised Autonomy** by Karen Petersen*, Oskar von Stryk
9. **Selecting a Small Unmanned Air Vehicle System using the DARPA Crowdsourcing Model** by Stephen Prior*, Mehmet Erbil, Mantas Brazinskas, Witold Mielniczek
10. **The 2012 Safety, Security, and Rescue Robotics Summer School** by Raymond Sheh*, Tetsuya Kimura, Daniele Nardi, Johannes Pellenz, Gerald Steinbauer
11. **Social Head Gaze and Proxemics Scaling for an Affective Robot Used in Victim Management** by Robin Murphy, Zachary Henkel, Vasant Srinivasan*
12. **Community-Driven Development of Standard Software Modules for Search and Rescue Robots** by Stefan Kohlbrecher*, Karen Petersen, Gerald Steinbauer, Johannes Maurer, Peter Lepej, Suzana Uran, Rodrigo Ventura, Christian Dornhege, Andreas Hertle, Raymond Sheh, Johannes Pellenz
13. **Using the Kinect for Search and Rescue Robotics** by Jesus Suarez*, Robin Murphy
14. **A Research Project on SSRR Standardization for the Enhancement of its Utilization in Japan** by Satoshi Tadokoro, Tetsuya Kimura*

BY DAY: Schedule for SSRR Paper Presentations and Activities

Tuesday Nov. 6, 2012

| | |
|----------|---|
| | All sessions will be in the Brazos Amphitheater |
| 9:00 AM | Keynote: Asama |
| 10:15 AM | |
| 10:30 AM | Board Buses at West Entrance of Hilton for Lunch, Tour of TEEX Brayton Fire Fires, Disaster City [®] , and Emergency Operations Training Center (must wear closed toe shoes for Disaster City [®]) |
| | Return to Hilton |
| 1:30 PM | |
| 2:00 PM | Keynote: Pratt |
| 3:10 AM | <i>break with refreshments</i> |
| 3:30 PM | S4: Human-Robot Interaction I (invited) 19 Trust in Emergency Evacuation Robots 56 Asymmetric Velocity Moderation: a Reactive Strategy for Human Safety 15 The SHERPA project: smart collaboration between humans and ground-aerial robots for improving rescuing activities in alpine environments |
| 4:45 PM | Moderated Discussion: SSRR Roadmap |
| 5:30 PM | <i>sessions end for day</i> |

BY DAY: Schedule for SSRR Paper Presentations and Activities

Wednesday Nov. 7, 2012

| | Mockingbird A/B | Mockingbird C/D |
|----------|---|---|
| 9:00 AM | Keynote in Brazos Amphitheater: Voyles | |
| 10:00 AM | Break with Refreshments | |
| 10:20 AM | S5A: Snake-like Robots 38 Using Kinesthetic Input to Overcome Obstacles with Snake Robots 46 Dog and Snake Marsupial Cooperation for Urban Search and Rescue Deployment 14 Development of autonomous snake-like robot for use in rubble 42 Proposal of EARLI for snake robot's obstacle aided locomotion | S5B: Unmanned Aerial Vehicles 27 Mission Review of Aerial Robotic Assessment - Ammunition Explosion Cyprus 201127 54 Hexrotor UAV Platform Enabling Dexterous Interaction with Structures - Preliminary Work 22 3D change detection using low cost aerial imagery |
| 12:00 PM | lunch (on your own) | |
| 1:30 PM | S6A: Robot Platforms 48 MOTHERSHIP – A Serpentine Multi-Treaded Marsupial Robot for USAR 3 Development of a Practical Mobile Robot Platform for NBC Disasters and Its Field Test 1 Soft robot concept for autonomous propagation in confined and obstructed environments | S6B: Motion Planning and Control I 17 Motion Planning for Actively Reconfigurable Mobile Robots in Search and Rescue Scenarios 44 Achieving Bipedal Locomotion on Rough Terrain through Human-Inspired Control 35 Multi-Objective Sensor-Based Replanning for a Car-Like Robot 12 Planning Random path distributions for ambush games in unstructured environments |
| 3:10 PM | Break with Refreshments | |
| 3:30 PM | S7A: Human-Robot Interaction II 19 Trust in Emergency Evacuation Robots 56 Asymmetric Velocity Moderation: a Reactive Strategy for Human Safety The SHERPA project: smart collaboration between humans and 15 ground-aerial robots for improving rescuing activities in alpine environments | S7B: Motion Planning and Control II A Potential Function and Artificial Neural Network for Path Planning in 5 Dynamic Environments based on Self-Reconfigurable Mobile Robot System 29 Learning the terrain and planning a collision-free trajectory for indoor post-disaster environments 53 Learning Based Semi-Autonomous Control for Robots in Urban Search and Rescue |
| 4:45 PM | Sessions end for the day | |
| 5:00 PM | board buses at West Entrance of Hilton to attend the TAMU Robotics Labs tours (sign up) | |
| 6:00 PM | board buses at West Entrance of Hilton to attend Banquet | |
| 6:15 PM | buses stop at Wisenbaker to pick up Robotic Lab tour participants | |
| 6:30 PM | arrive at Bush Presidential Library for tour and banquet (SSRR nametag required) | |
| 9:30 PM | buses depart Bush Presidential Library for Hilton | |

BY DAY: Schedule for SSRR Paper Presentations and Activities

Thursday Nov. 8, 2012

| | |
|-----------------|---|
| | All sessions will be in the Brazos Amphitheater |
| 9:00 AM | Tutorial on Autonomy in SSR Robots: Kleiner |
| 10:30 AM | <i>Break</i> |
| 10:45 AM | Tutorial on Where Robots Have Been Used and Lessons Learned: Murphy and Tadokoro |

12:15 PM

Conference Ends: No Host Farewell Lunch