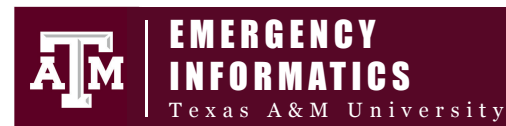


# SSRR 2012

**10<sup>th</sup> 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<sup>®</sup> Innovation Network. Special thanks to the Texas A&M Engineering Extension Service.*

The floor plan shows a rectangular building with a 'Rear Entrance' at the top center, marked by a grid of windows. On the left side, there are four rooms labeled A, B, C, and D. Rooms A and B are shaded light blue and are collectively labeled 'Mockingbird Rooms' below them. Rooms C and D are shaded light green. To the right of these rooms is a large orange-shaded area labeled 'Braxos Amphitheater'. A red star is placed on the wall between the Mockingbird Rooms and the Amphitheater, indicating the location of the 'Secret Passage' mentioned in the text.

- Poster session, refreshments

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- Map Labels:**
- Top:** Rear Entrance (marked with a red star), Annex Amphitheatre
  - Top Center:** Meeting Rooms (A, B, C, D)
  - Top Right:** Cabana Rooms (Room 1-3, Room # 200 - 277)
  - Right:** Tail Entrance, Cabana Rooms
  - Center:** Blackout Grand Ballroom 4, 7, 6, 5, 3, 1, 2
  - Center Right:** Reception, Upper Pool Balcony, Lower Pool Balcony, Pool
  - Bottom Right:** Cabana Rooms
  - Bottom Center:** Elevators, Lift Shop, Executive Offices
  - Bottom Left:** Lobby, An Gallery Bar
  - Left:** Oakwood Ballroom, Loading Dock, West Entrance
  - Far Left:** Second Floor, Posa Room, Board Room, Basement, Exercise Room
  - Bottom:** Front Entrance

## 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		S5A: Snake-like robots		S5B: Unmanned Aerial Vehicles			
10:30 AM				Tour of Disaster City, Brayton Fire Fields, Emergency Operations Training Center				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)		No host farewell lunch	
12:15 PM						TEEX: Overview of Disasters NIST Response Robots					
1:30 PM		S2A Navigation and Mapping		S2B Multi-agent coordination II		S6A: Robot Platforms		S6B: Motion Planning and Control I			
2:00 PM				Keynote: Pratt							
3:10 PM				Late Breaking Report Posters with refreshments						break with refreshments	
3:30 PM										break with refreshments	
3:45 PM				S4: Human-Robot Interaction I (invited)		S7A: Human Robot Interaction II		S7B: Motion Planning and Control II			
4:00 PM											
4:15 PM											
4:30 PM		S3A: CBR Events		S3B: Sensing and Sensor Fusion							
4:45 PM				Moderated Discussion: SSRR Roadmap							
5:00 PM											
5:45 PM		student no-host pizza dinner at Boston's				Board bus for Tour of Texas A&M and					
6:00 PM								Board bus at Hilton for Library and Banquet			
6:15 PM								Board bus at Texas A&M for Library and Tour of Presidential Library and Banquet			
6:30 PM											
9:00 PM								bus returns to Hotel			

**BY DAY: Schedule for SSRR Paper Presentations and Activities**

**Monday Nov. 5, 2012**

	Mockingbird A/B	Mockingbird C/D
<b>9:00 AM</b>	<b>Keynote in Brazos Amphitheater: Tadokoro</b>	
<b>10:00 AM</b>	<b>Break with Refreshments</b>	
<b>10:20 AM</b>	<b>S1A: Urban Search &amp; Rescue &amp; Field Tests</b> 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	<b>S1B: Multi-agent coordination I</b> 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
<b>12:00 AM</b>	<b>12:00 AM</b>	
<b>1:30 PM</b>	<b>S2A: Navigation &amp; Mapping</b> 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	<b>S2B: Multi-agent coordination II</b> 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
<b>3:10 PM</b>	<b>Poster Session with Refreshments</b>	
<b>4:30 PM</b>	<b>S3A: CBR Events</b> 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	<b>S3B: Sensing and Sensor Fusion</b> 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
<b>5:45 PM</b>	<b>sessions end for day</b>	
<b>6:00 PM</b>	<b>Students meet in lobby to go to Boston's Pizza</b>	

# 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\*

**Tuesday Nov. 6, 2012**

	<b>All sessions will be in the Brazos Amphitheater</b>
<b>9:00 AM</b>	<b>Keynote: Asama</b>
<b>10:15 AM</b>	
<b>10:30 AM</b>	<p><b>Board Buses at West Entrance of Hilton for Lunch, Tour of TEEX Brayton Fire Fires, Disaster City<sup>®</sup>, and Emergency Operations Training Center (must wear closed toe shoes for Disaster City<sup>®</sup>)</b></p> <p><b>Return to Hilton</b></p>
<b>1:30 PM</b>	
<b>2:00 PM</b>	<b>Keynote: Pratt</b>
<b>3:10 PM</b>	<b><i>break with refreshments</i></b>
<b>3:30 PM</b>	<p><b>S4: Human-Robot Interaction I (invited)</b></p> <p>82 Discoveries from Integrating Robots Into SWAT Team Training Exercises</p> <p>83 Achieving Common Ground under Asymmetric Agency and Social Sentience in Communication for Human-Robot Teaming</p> <p>84 Towards Physical Interaction with Small Unmanned Aerial System Payloads</p>
<b>4:45 PM</b>	<b>Moderated Discussion: SSRR Roadmap</b>
<b>5:30 PM</b>	<b><i>sessions end for day</i></b>

**BY DAY: Schedule for SSRR Paper Presentations and Activities**

**Wednesday Nov. 7, 2012**

	Mockingbird A/B	Mockingbird C/D
9:00 AM	<b>Keynote in Brazos Amphitheater: Voyles</b>	
10:00 AM	<b>Break with Refreshments</b>	
10:20 AM	<b>S5A: Snake-like Robots</b>  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	<b>S5B: Unmanned Aerial Vehicles</b>  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	<b>lunch (on your own)</b>	
1:30 PM	<b>S6A: Robot Platforms</b>  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	<b>S6B: Motion Planning and Control I</b>  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	<b>Break with Refreshments</b>	
3:30 PM	<b>S7A: Human-Robot Interaction II</b>  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	<b>S7B: Motion Planning and Control II</b>  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	<b>Sessions end for the day</b>	
5:00 PM	<b>board buses at West Entrance of Hilton to attend the TAMU Robotics Labs tours (sign up)</b>	
6:00 PM	<b>board buses at West Entrance of Hilton to attend Banquet</b>	
6:15 PM	<b>buses stop at Wisenbaker to pick up Robotic Lab tour participants</b>	
6:30 PM	<b>arrive at Bush Presidential Library for tour and banquet (SSRR nametag required)</b>	
9:30 PM	<b>buses depart Bush Presidential Library for Hilton</b>	

**BY DAY: Schedule for SSRR Paper Presentations and Activities**

**Thursday Nov. 8, 2012**

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

**12:15 PM**

**Conference Ends: No Host Farewell Lunch**