

# Rong Yang

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## Education

- **University of Southern California**, since Aug. 2009  
Ph.D. in Computer Science. *Advisor:* Dr. Milind Tambe
- **Ohio State University**, Sep. 2007~Jul. 2009  
M.S. in Electrical and Computer Engineering
- **Tsinghua University**, Aug. 2003~Jul. 2007  
B.S. in Information Electronic and Engineering

## Research Experiences

- **University of Southern California**, Aug. 2009~Present  
*Research Assistant*, with Prof. Milind Tambe, in the area of Multi-agent Systems. Current focus is on Behavioral Game Theory, where we relax the assumption of perfect rationality of the human adversary in a security game and develop more realistic model of humans' decision making. We also build efficient algorithms to compute the defender's optimal strategies against such models. The long-term goal is to design better decision-making support system where humans are involved.
- **Ohio State University**, Sep. 2007~Jun.2009  
*Research Assistant*, with Prof. Benjamin Coifman. Worked on projects about Intelligent Transportation System. Designed and developed a vehicle Detection and Classification system using LIDAR equipped probe vehicle.
- **Tsinghua University**, Sep. 2006~Jun. 2007  
*Research Assistant*, with Prof. Hao Zhang. Designed a traffic scenario classification method to interpret the vehicle's behavior using the technique of data mining and machine learning
- **Huawei Technologies Ltd**, Nanjing, P. R. China, Jun. 2006~Jul. 2006  
*Summer Intern*, Designed and implemented an embedded system which adds characters to original video streams. The product was implemented into real application for highway monitory

## Teaching Experiences

- **University of Southern California**, Fall 2010  
*Teaching Assistant* of CSCI 300, with Prof. Milind Tambe. Held office hours, designed assignment, provided assignment solution and gave lectures on some of the subjects.
- **Ohio State University**, Spring, Summer and Fall 2008  
*Lab Supervisor* of ECE 206 (Switching Circuits) and ECE 209 (Circuits and Electronics). Independently supervised lab section, graded lab report and held office hours.

## Honors and Awards

- Dean's Fellowship, Viterbi School of Engineering, USC, 2009~2012
- Helene M. Overly Memorial Scholarship (only one winner in the State of Ohio), 2008
- OSU Graduate Scholarship, 2007~2009
- Scholarship for Excellent Academic Performance, Tsinghua University, 2004 and 2006
- Ranked 11<sup>th</sup>/564000 in the National College Entrance Exam, Anhui Province, China, 2003

## Computing Skills

- Programming: Proficient skills in Matlab, C/C++, Java; Development experience with HTML, SQL
- Software/OS: Microsoft Office, SPSS, SAS, Window, Linux, Mac OS

## Publications

### *Journal Papers*

1. **R. Yang**, C. Kiekintveld, F. Ordonez, M. Tambe and R. John, *Improving Resource Allocation Strategy Against Human Adversaries in Security Games: An Extended Study*, Artificial Intelligence Journal, 2012 (accepted with major revision)

### *Conference Papers*

2. **R. Yang**, F. Ordonez and M. Tambe, *Computing Optimal Strategy against Quantal Response in Security Games*, In Proc. of the 11th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), June 2012
3. **R. Yang**, A. X. Jiang, F. Fang, R. Maheswaran and M. Tambe, *Designing Better Strategies against Human Adversaries in Graph-Based Security Games*, In Proc. of the 11th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), June 2012 (Short Paper)
4. E. Shieh, B. An, **R. Yang**, M. Tambe, C. Baldwin, J. DiRenzo, B. Maule, G. Meyer, *PROTECT: A deployed game theoretic system to protect the ports of the United States*, In Proc. of the 11th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), June 2012
5. **R. Yang**, M. Tambe, M. Jain, J. Kwak, J. Pita and Z. Yin, *Game Theory and Human Behavior: Challenges in Security and Sustainability (invited)*, In Proc. of the 2nd International Conference on Algorithmic Decision Making (ADT), November 2011
6. **R. Yang**, C. Kiekintveld, F. Ordonez, M. Tambe and R. John, *Improving Resource Allocation Strategy Against Human Adversaries in Security Games*, In Proc. of the 22nd International Joint Conference on Artificial Intelligence (IJCAI), July 2011
7. **R. Yang**, M. Tambe, C. Kiekintveld, F. Ordonez and R. John, *Improved Computational Models of Human Behavior in Security Games*, In Proc. of the 10th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), May 2011 (Short Paper)
8. J. Kwak, **R. Yang**, Z. Yin, M. Taylor, M. Tambe, *Teamwork in Distributed POMDPs: Execution-time Coordination Under Model Uncertainty*, In Proc. of the 10th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), May 2011 (Short Paper)

*Book Chapters*

9. M. E. Taylor, C. Kiekintveld, Z. Yin, **R. Yang**, J. Kwak and M. Tambe, *Two decades of multiagent teamwork research: Past, present and future*, In C. Guttman and F. Dignum editors, Postproceedings of Collaborative Agents REsearch and Development (CARE) 2010, Springer, 2011

*Magazine, Symposium and Workshop Papers*

10. **R. Yang**, F. Fang, A. X. Jiang, K. Rajagopal, M. Tambe and R. Maheswaran, *Modeling Human Bounded Rationality to Improve Defender Strategies in Network Security Games*, In Workshop on Human-Agent Interaction Design and Models held at AAMAS 12, Valencia, Spain
11. B. An, E. Shieh, **R. Yang**, M. Tambe, C. Baldwin, J. DiRenzo, B. Maule and G. Meyer, *PROTECT – A Deployed Game Theoretic System for Strategic Security Allocation for the United States Coast Guard*, In AI Magazine, 2012 (under review)
12. M. P. Johnson, F. Fang, **R. Yang**, M. Tambe and H. J. Albers, *Challenges in Patrolling to Maximize Pristine Forest Area*, AAAI Spring Symposium on Game Theory for Security, Sustainability and Health, 2012 (Position Paper)
13. J. Pita, **R. Yang**, M. Tambe and R. John, *Toward Addressing Human Behavior with Observational Uncertainty in Security Games*, AAAI'11 Workshop on Applied Adversarial Reasoning and Risk Modeling (AARM 2011)
14. **R. Yang**, M. Tambe, C. Kiekintveld, F. Ordonez and R. John, *Including Human Behavior in Security Games*, In Workshop on Optimization in Multi-Agent Systems (OPTMAS) held at AAMAS 2011
15. J. Kwak, **R. Yang**, Z. Yin, M. E. Taylor and M. Tambe, *Teamwork and Coordination under Model Uncertainty in DEC-POMDPs*, In workshop on Interactive Decision Theory and Game Theory (IDTGT) of AAAI 2010

*Thesis*

16. **R. Yang**, B. Coifman and C. Toth, *Vehicle Detection and Classification from a LIDAR equipped probe vehicle*, **Master Thesis**, Ohio State University, Electrical and Computer Engineering, 2009  
*Thesis Advisor: Dr. Benjamin Coifman*

## Deployed Research

- **Port Resilience Operational/Tactical Enforcement to Combat Terrorism (PROTECT)**  
My algorithm (PASAQ) is at the heart of the PROTECT system, which has been used by the U.S. Coast Guard to schedule their patrols in the port of Boston since April 2011. The system has also been deployed in the port of New York for extended use and is in the testing stage.

## Professional Activities

- Program Committee member of Workshop on Human-Agent Interaction Design and Models, to be held at AAMAS, May 2012
- Co-organizer of the tutorial on Security Games, to be held at AAMAS, May 2012
- Program Committee member of the AAAI Spring Symposium on Game Theory for Security, Sustainability and Health, to be held in March 2012
- Program Committee member of Workshop on Applied Adversarial Reasoning and Risk Analysis, AAAI, August 2011

## Presentations

- *Improving Resource Allocation Strategies against Human Adversaries in Security Games*, at the 22nd International Joint Conference on Artificial Intelligence (IJCAI), July 2011, Barcelona, Spain
- *Including Human Behavior in Stackelberg Game for Security*, at Workshop on Optimization in Multi-Agent Systems (OPTMAS) held at AAMAS, May 2011, Taipei, Taiwan
- *Designing Better Randomization Strategies against Human Adversaries*, at INFORMS Computing Society Conference (ICS), January 2011, Monterey, CA, USA

## Students Supervised

- Noah Olsman (Undergraduate), Summer 2011
- Karthik Rajagopal (Undergraduate), Summer 2011
- Mohit Goenka (M.S.), July 2010~March 2011

Last updated: May 3, 2012