














RESEARCH INTERESTS



- > Human-aware and human-centric planning for automated agents - generating explainable plans and plan explanations for a social robot [1, 2, 10, 13, 14, 17, 18]
- > Cooperating robots in and outside avenues of traditional human-robot teams - challenges in human-robot cohabitation [5, 6, 7, 8, 19, 20, 21]
- > Alternative modes of communication – augmented reality (AR) / electroencephalography (EEG) – for effective human-robot interaction in semi-autonomous workspaces [15] 
- > Crowdsourced planning and proactive decision support - planning techniques to guide and critique behavior of humans engaged in planning/scheduling tasks [3, 9, 11, 12, 16, 22]

PUBLICATIONS


CONFERENCES

- [1] **Explanation Generation as Model Reconciliation in Multi-Model Planning.** *T. Chakraborti*, S. Sreedharan, S. Kambhampati and Y. Zhang. IJCAI 2017. 
- [2] **Plan Explicability and Predictability for Robot Task Planning.** Y. Zhang, S. Sreedharan, A. Kulkarni, *T. Chakraborti*, H. H. Zhuo and S. Kambhampati. ICRA 2017. 
- [3] **UbuntuWorld 1.0 LTS - A Platform for Automated Problem Solving & Troubleshooting in the Ubuntu OS.** *T. Chakraborti*, K. Talamadupula, K. P. Fadnis, M. Campbell, S. Kambhampati. IAAI 2017. 
- [4] **Compliant Conditions for Polynomial Time Approximation of Operator Counts.** *T. Chakraborti*, S. Sreedharan, S. Sengupta, T. K. Satish, and S. Kambhampati. SoCS 2016.  
- [5] **Planning with Resource Conflicts in Human-Robot Cohabitation.** *T. Chakraborti*; Y. Zhang; D. Smith and S. Kambhampati. AAMAS 2016. 
- [6] **Planning for Serendipity.** *T. Chakraborti*; G. Briggs; K. Talamadupula; Y. Zhang; M. Scheutz; D. Smith; and S. Kambhampati. IROS 2015. 
- [7] **A Human Factors Analysis of Proactive Support in Human-Robot Teaming.** Y. Zhang; V. Narayanan; *T. Chakraborti*; and S. Kambhampati. IROS 2015. 
- [8] **Coordination in Human-Robot Teams Using Mental Modeling and Plan Recognition.** K. Talamadupula, G. Briggs, *T. Chakraborti*, M. Scheutz, S. Kambhampati. IROS 2014. 
- [9] **AI-MIX: How a Planner Can Help Guide Humans Towards a Better Crowdsourced Plan.** L. Manikonda, *T. Chakraborti*, S. De, K. Talamadupula, S. Kambhampati. IAAI 2014. 

JOURNALS & BOOK CHAPTERS

- [10] **AI Challenges for Cognitive Human-Robot Teaming.** *T. Chakraborti*, S. Kambhampati, M. Scheutz, and Y. Zhang. Submitted to IEEE Intelligent Systems. [Under Review] 
- [11] **Herding the Crowd: Using Automated Planning for Better Crowdsourced Planning.** L. Manikonda, *T. Chakraborti*, S. De, K. Talamadupula, S. Kambhampati. In the Journal of Human Computation. 

WORKSHOPS, DEMOS & MISCELLANEOUS

- [12] **Mr. Jones – Towards a Proactive Smart Room Orchestrator.** *T. Chakraborti*, K. Talamadupula, M. Dholakia, B. Srivastava, J. Kephart, and R. Bellamy. AAAI 2017 Fall Symposium on Human-Agent Groups: Studies, Algorithms and Challenges. 

- [13] **Balancing Explicability and Explanation in Human-Aware Planning.** S. Sreedharan*, *T. Chakraborti**, and S. Kambhampati. AAAI 2017 Fall Symposium on Artificial Intelligence for Human-Robot Interaction. [↗](#)
- [14] **Explanations as Model Reconciliation – A Mutli-Agent Perspective.** S. Sreedharan*, *T. Chakraborti**, S. Kambhampati. AAAI 2017 Fall Symposium on Human-Agent Groups: Studies, Algorithms & Challenges. [↗](#)
- [15] **Alternative Modes of Interaction in Proximal Human-in-the-Loop Operation of Robots..** *T. Chakraborti*, S. Sreedharan, A. Kulkarni, and S. Kambhampati. ICAPS 2017 Workshop on User Interfaces and Scheduling and Planning (UISP); and ICAPS 2017 System Demonstrations and Exhibits. [↗](#)
- [16] **RADAR - A Proactive Decision Support System for Human-in-the-Loop Planning.** S. Sengupta, *T. Chakraborti*, S. Sreedharan, S. G. Vadlamudi, and S. Kambhampati. ICAPS 2017 Workshop on User Interfaces and Scheduling and Planning (UISP); and ICAPS 2017 System Demonstrations and Exhibits. [↗](#)
- [17] **Explicable Robot Planning as Minimizing Distance from Expected Behavior.** A. Kulkarni, *T. Chakraborti*, Y. Zhang, S. Vadlamudi, and S. Kambhampati. [↗](#)
- [18] **Plan Explainability and Predictability for Robot Task Planning.** Y. Zhang; S. Sreedharan; A. Kulkarni; *T. Chakraborti*; H. H. Zhuo; and S. Kambhampati. In RSS Workshop on Planning for Human-Robot Interaction: Shared Autonomy and Collaborative Robotics. [↗](#)
- [19] **An ROS-based Shared Communication Middleware for Plug & Play Modular Intelligent Design of Smart Systems.** *T. Chakraborti*, S. Srivastava, A. Pinto, and S. Kambhampati. [↗](#)
- [20] **A Formal Framework for Studying Interaction in Human-Robot Societies.** *T. Chakraborti*; K. Talamadupula; Y. Zhang; S. Kambhampati. In AAAI 2016 Workshop on Symbiotic Cognitive Systems (SCS). [↗](#)
- [21] **A Game-Theoretic Approach to Ad-hoc Coalition Formation in Human-Robot Societies.** *T. Chakraborti*; Venkata Vamsikrishna Meduri; Vivek Dondeti; and S. Kambhampati. In AAAI 2016 Workshop on Multiagent Interaction without Prior Coordination (MIPC). [↗](#)
- [22] **AI-MIX: How a Planner Can Help Guide Humans Towards a Better Crowdsourced Plan.** L. Manikonda, *T. Chakraborti*, S. De, K. Talamadupula, S. Kambhampati. In ICAPS 2014 Scheduling and Planning Applications Workshop (SPARK). Also appears in HCOMP WiP 2014.

SUMMARY OF ACADEMIC ACTIVITIES

- [current] PhD program, CS, ASU. (since Fall 2013) - *Overall Graduate GPA: 4.0/4.*
- Bachelor of Engineering in Electronics and Telecommunication from Jadavpur University, India. (2009-13) - *CGPA: 8.97/10 (84.45%, First Class Honours)*

PROFESSIONAL EXPERIENCE






- Fall 2013 - present: graduate research assistant at Yochan Lab, ASU under Dr. Subbarao Kambhampati.
- Summer 2017: intern at **IBM T.J. Watson Research Center**, NY. Worked with Rachel K.E. Bellamy and Kartik Talamadupula on *Mr. Jones – Towards a Proactive Smart Room Orchestrator*. [↗](#)
- Summer 2016: intern at **IBM T.J. Watson Research Center**, NY. Worked with Murray Campbell and Kartik Talamadupula on *UbuntuWorld 1.0 LTS – A Platform for Automated Problem Solving & Troubleshooting in the Ubuntu OS*. [↗](#)
- Summer 2015: intern at **United Technologies Research Center**, Berkeley. Worked with Dr. Siddharth Srivastava on *Plug & Play Distributed Intelligent Agents*. [↗](#)

SERVICE/INVOLVEMENT

- [in process] Co-Chair of the HRI 2018 Workshop on Virtual, Augmented and Mixed Reality for Human-Robot Interaction (VAM4HRI) [↗](#)
- IJCAI 2017 Workshop on Explainable AI (XAI) PC [↗](#)
- Co-Chair of the AAMAS 2017 Workshop on Multi-Agent Interaction Without Prior Coordination (MIPC) [↗](#)
- Member of the IJCAI 2016 Review Process Committee [↗](#)

- Reviewer for AAAI'14, AAAI'15, AAAI'17, ICAPS'17, IROS'16 and ICRA'17; AI-HRI AAAI'16 Fall Symposium; JAR; JAAMAS; IEEE Transactions SMC - Part B; IEEE TBioCAS; etc.
- Student volunteer for GPSA, ASU.
- Student volunteer at ICAPS'14 and AAMAS'16.

AWARDS AND RECOGNITION

- Partnership of AI. Author of Primer for Pillar on Collaborations between People and AI. Working Committee meeting at Berlin, 2017. 
- Microsoft Imagine Cup 2017 US Finalist, leader of team *ERobotics*  In the news ...     
- IBM PhD Fellowship 2016-18 twice in a row! In the news ... 
- University Graduate Fellowship Awards Fall 2013 - Spring 2014 - Spring 2015 - Spring 2017
- People's Choice Best System Demonstration Award ICAPS'14 
- Travel Grants from ICAPS'14-15, IROS'15, SoCS'16, AAMAS'16, IJCAI'17
- Central Board of Secondary Education Merit Scholarship 2009-13
- Certificate of Merit in Science (Physics) in 2009

current as of 10/19/2017