Ravi Tejwani

RESEARCH	Massachusetts Institute of Technology 32 Vassar St. Room G482, Cambridge, MA 02139	tejwanir@mit.edu https://people.csail.mit.edu/tejwanir/
POSITION	PhD Student at MIT	
RESEARCH INTERESTS	Robotics, Human Robot Interactions, Markov Decision Processes, Reinforcement Learning, Cognitive modeling, Social Interactions, Dynamic Programming, Theory of Mind.	
EDUCATION	Massachusetts Institute of Technology Ph.D. in Electrical Engineering and Computer Science (2021-Now) Massachusetts Institute of Technology M.S. in MIT Media Lab (2018-2020) Visvesvaraya Technological University B.S. in Computer Science (2006-2010)	
WORK EXPERIENCE	IBM T.J. Watson Research Center Research Staff Member (2010-2018)	

Publications

MANUSCRIPTS IN PREP	Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Xavier Puig, Bennett Stankovits, Dan Gutfreund, Joshua B. Tenenbaum, Boris Katz, and Andrei Barbu. Towards designing benchmark for Social Interactions in Human-AI Collaboration.
SUBMITTED MANUSCRIPTS	Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Bennett Stankovits, Dan Gutfreund, Joshua B. Tenenbaum, Boris Katz, and Andrei Barbu. Social Linking MDPs. *Under review in IROS 2022.*
CONFERENCE PROCEEDINGS	Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Bennett Stankovits, Dan Gutfreund, Joshua B. Tenenbaum, Boris Katz, and Andrei Barbu (2022). Incorporating Rich Social Interactions Into MDPs. *In Proc. of International Conference of Robotics and Automation (ICRA).* Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Boris Katz, and Andrei Barbu. (2021). Social Interactions as Recursive MDPs. *In Proc. of Conference on Robot Learning (CoRL).* Ravi Tejwani, Felipe Moreno, Sooyeon Jeong, Hae Won Park, Cynthia Breazeal. (2020). Migratable AI: Effect of identity and information migration on users' perception of conversational AI agents. *In Proc. of International Conference on Robot and Human Interactive Communication (RO-MAN).*

Ravi Tejwani, Boris Katz, Cynthia Breazeal. (2020). Migratable AI: Investigating users' affect on identity and information migration of a conversational AI agent. *In Proc. of International Conference on Social Robotics (ICSR).*

Anna Choromanska, Benjamin Cowen, Sadhana Kumaravel, Ronny Luss, Mattia Rigotti, Irina Rish, Brian Kingsbury, Viatcheslav Gurev, Ravi Tejwani, Djallel Bouneffouf. (2019). Beyond Backprop: Online Alternating Minimization Auxiliary Variables. *In Proc. of International Conference on Machine Learning (ICML).*

Patrick Watson, Teng Fei Ma, Ravi Tejwani, Maria Chang, JaeWook Ahn, Sharad Sundararajan. (2018). Human-level Multiple Choice Question Guessing Without Domain Knowledge: Machine-Learning of Framing Effects. *In Proc. of International World Wide Web Conference (WWW).*

Elif Eyigoz, Guillermo A Cecchi, Ravi Tejwani. (2018). Predicting Cognitive Impairments with a Mobile Application. *In Proc. of International Conference on Agents and Artificial Intelligence (ICAART).*

Jae-wook Ahn, Ravi Tejwani, Sharad Sundararajan, Aldis Sipolins, Sean O'Hara, Anand Paul, Ravi Kokku, Jan Kjallstrom, Nam Hai Dang, Yazhou Huang. (2018). Intelligent Virtual Reality Tutoring System Supporting Open Educational Resource Access. *In Proc. of International Conference on Intelligent Tutoring Systems (ITS).*

Jae-wook Ahn, Maria Chang, Patrick Watson, Ravi Tejwani, Sharad Sundararajan, Tamer Abuelsaad, Srijith Prabhu. (2018). Adaptive Visual Dialog for Intelligent Tutoring Systems. *In Proc. of International Conference on Artificial Intelligence in Education (AIED).*

Matthew Ventura, Maria Chang, Peter Foltz, Nirmal Mukhi, Jessica Yarbro, Anne Pier Salverda, John Behrens, Jae-wook Ahn, Tengfei Ma, Tejas I Dhamecha, Smit Marvaniya, Patrick Watson, Cassius D'helon, Ravi Tejwani, Shazia Afzal. (2018). Preliminary Evaluations of a Dialogue-Based Digital Tutor. *In Proc. of International Conference on Artificial Intelligence in Education(AIED).*

Maria Chang, Matthew Ventura, Jae-wook Ahn, Peter Foltz, Tengfei Ma, Tejas I Dhamecha, Smit Marvaniya, Patrick Watson, Cassius D'helon, Amy Wetzel, Andy Packard Haas, Kaitlyn Banaszynski, John Behrens, Gailene Nelson, Sharad C Sundararajan, Ravi Tejwani, Shazia Afzal, Nirmal Mukhi. (2018). Dialogue-based tutoring at scale: Design and Challenges. *In Proc. of International Conference of the Learning Sciences (ICLS).*

Arun Chauhan, Ravi Tejwani, Durga Toshniwal. (2016). Twitter can predict your next place of visit. *In International Journal of Distributed Sensor Networks.*

Arun Chauhan, Durga Toshniwal, Ravi Tejwani. (2016). Predicting future place of

visit using user's personality profile. *In Proc. of International Conference on Computational Techniques in Information and Communication Technologies.*

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WORKSHOP
PAPERS

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Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Bennett Stankovits, Dan Gutfreund, Joshua B. Tenenbaum, Boris Katz, and Andrei Barbu. (2021). Towards Incorporating Rich Social Interactions Into MDPs. *In NeurIPS Workshop on Cooperative AI.*

Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Boris Katz, and Andrei Barbu. (2021). Multi-level Social Intentions Reasoning. *In ICRA Workshop on Social Intelligence in Humans and Robots.*

Ravi Tejwani*, Yen-Ling Kuo*, Tianmin Shu, Boris Katz, and Andrei Barbu. (2021). Towards Social Interactions as Recursive MDPs . *In IROS Workshop Cognitive and Social Aspects of Human Multi-Robot Interaction*

Minha Lee, Dimosthenis Kontogiorgos, Michal Luria, Ravi Tejwani, Matthew J Dennis, Andre Pereira. (2021). Robo-Identity: Exploring Artificial Identity and Multi-Embodiment. *In Companion of International Conference on Human-Robot Interaction(HRI), 2021.*

Ravi Tejwani, Adam Liska, Hongyuan You, Jenna Reinen, Payel Das. (2017). Autism Classification Using Brain Functional Connectivity Dynamics and Machine Learning. *In NeurIPS Workshop on BigNeuro.*

Patents

GRANTED

Watson, Patrick; Ma, Tengfei; Chang, Maria; Tejwani, Ravi; Sipolins, Aldis; (2021) Motion based authentication *US Patent 10,986,087*

Cavallo, Marco; Tejwani, Ravi; Watson, Patrick; Sipolins, Aldis; Wu, Hui; (2021) Virtual generation of labeled motion sensor data *US Patent 10,922,821*

Sipolins, Aldis; Reinen, Jenna; Wu, Hui; Tejwani, Ravi; Cavallo, Marco; (2021) Facial mirroring in virtual and augmented reality *US Patent 10,915,740*

Cavallo, Marco; Reinen, Jenna; Tejwani, Ravi; Sipolins, Aldis; Wu, Hui; (2021) Personalized interactive presentation via augmented reality *US Patent 11,010,176*

Ahn, Jae-Wook; Chang, Maria D; Tejwani, Ravi; Watson, Patrick D; (2020) Adaptive presentation of educational content via templates *US Patent 10,629,089*

Sipolins, Aldis; Reinen, Jenna; Wu, Hui; Tejwani, Ravi; Cavallo, Marco; (2020) Condition detection in a virtual reality system *US Patent 10,524,737*

Sipolins, Aldis; Reinen, Jenna; Tejwani, Ravi; Cavallo, Marco; Wu, Hui; (2020)Augmented reality speed reading *US Patent 10,725,540*

Kozloski, James R; Tejwani, Ravi; Asthana, Neeraj; Chefalas, Thomas; (2020) Incremental adaptive modification of virtual reality image *US Patent 10,732,705*

Cavallo, Marco; Sipolins, Aldis; Reinen, Jenna; Tejwani, Ravi; Wu, Hui; (2020) Locomotion in virtual reality desk applications *US Patent 10,775,879*

Lei, Hui L ; Mohindra, Ajay; Ranchal, Rohit; Tejwani, Ravi; (2019) Decomposing composite product reviews *US Patent 10,268,677*

APPLICATION   Kasireddy, Vinay Kumar Reddy; Mukhi, Nirmal Kumar; Tejwani, Ravi; (2020) Adaptive dialog strategy for multi turn conversation systems using interaction sequences *US Patent App. 16/172,016*

SIPOLINS, Aldis; Cavallo, Marco; Tejwani, Ravi; Reinen, Jenna; Wu, Hui; (2020) Enhanced Speed Reading With Eye Tracking And Blink Detection *US Patent App. 16/197,874*

SIPOLINS, Aldis; Watson, Patrick; Tejwani, Ravi; Cavallo, Marco; Wu, Hui; (2020) Closed loop biofeedback dynamic assessment *US Patent App. 16/448,176*

Chang, Maria D; Sundararajan, Sharad; Tejwani, Ravi; Watson, Patrick D; (2020) Adaptive Presentation of Educational Content *US Patent App. 16/802,491*

Ma, Ryan; Mujumdar, Raghavendra; O'keeffe, William G; Tejwani, Ravi; (2019) Machine learning for medical screening recommendations based on patient activity information in social media *US Patent App. 15/656,406*

Abuelsaad, Tamer E; Tejwani, Ravi; Watson, Patrick; SIPOLINS, Aldis; (2019) Adaptive Rendering of Virtual and Augmented Displays to Improve Display Quality for Users Having Different Visual Abilities *US Patent App. 15/927,776*

Eisen, Jeffrey N; Kummamuru, Krishna; Sharma, Tuhin; Tejwani, Ravi; (2017) User experience using social and financial information *US Patent App. 15/041,458*

Selected Press

Giving robots Social Skills. (2021). MIT News

Meet the robots with their very own social skills. (2021). World Economic Forum

Teaching robots to socialize. (2021). TechCrunch

Researchers are working on giving robots social skills. (2021). Engadget

Teaching Robots How to Interact With Humans and Other Robots.(2021). Techtimes

Will Robots Live With Humans Soon? (2021). Science Times

Service and Leadership

SERVICE

Reviewer: Neural Information Processing Systems (*NeurIPS*), International Conference on Learning Representations (*ICLR*), Association for the Advancement of Artificial Intelligence (*AAAI*), International Conference on Human-Robot Interaction (*HRI*), International Conference on Intelligent User Interfaces (*IUI*).

Area Chair: International Conference on Intelligent User Interfaces (*IUI*).

LEADERSHIP

IBM *Corporate Social Responsibility (CSC)* Leadership Program, Summer 2016, Zagreb, Croatia (acceptance rate: 0.5%)

Part of 12 member team from Australia, Brazil, Canada, China, Japan, India, Mexico, Philippines, and the USA which worked with the Department of Public Administration & Health, Croatia to recommend data analytics solutions on open data for the public sector, e-Citizens, and registries. The technical recommendations were shared with the *Prime Minister of Croatia*.

Rescue and Relief Operation (Earthquake), June 2015, Kathmandu, Nepal

Worked as a Technical Assistant under the Ministry of Defense, India. Duties included de-duplication of victims data, providing real-time data analytics to the Indian Air Force, and set up a disaster management system for the distribution of relief materials to the displaced people. Disaster Management System, Facebook Page

Rescue and Relief Operation (Flash floods), May 2013, Uttrakhand, India

Worked as a Technical Assistant under the Ministry of Defense, India. Duties included de-duplication of missing people data, development of data API to load the missing persons data onto social media in an attempt to trace them. In coordination with the state police department, we ended up rescuing more than 400 missing people and connected them with their loved ones. Press Release, Facebook Page

STUDENTS
MENTORED

Bennett L Stankovits (2020-)