

Thomas R Groechel

CONTACT INFORMATION	3425 Motor Ave #310 Los Angeles, CA 90034	<i>Mobile:</i> 248-921-3254 <i>E-mail:</i> groechel@usc.edu
RESEARCH INTERESTS	Socially Assistive Robot (SAR) Tutors, Virtual and Augmented Reality Robotics	
EDUCATION	University of Southern California , Los Angeles, CA – Ph.D. Computer Science – Research Advisor: Professor Maja J. Matarić	<i>July 2018 - Present</i>
	University of Michigan , Ann Arbor, MI – B.S.E. Computer Science – Undergraduate Research Advisor: Professor Odest C. Jenkins	<i>Sep 2014 - May 2018</i>
EXPERIENCE	Ph.D. Researcher, USC Interaction Lab , Los Angeles, CA – Created mixed reality robot tutor aiming to teach kids through movement – Developed on and deployed telepresence robots in schools for home-bound students – Supported in-home deployments of robot tutor for students with ASD	<i>July 2018 - Present</i>
	UG Researcher, UofM 4Progress Lab , Ann Arbor, MI – Developed 2D SLAM algorithm using Iterative Closest Point visualization – Implemented Stochastic Gradient Descent for loop closure based on <i>Fast Iterative Alignment of Pose Graphs with Poor Initial Estimates</i> (Olson et al.) using the Fetch	<i>May 2016 - May 2018</i>
	Staff Development Czar and TA , Ann Arbor, MI – Created Staff Development program for teaching staff of 30 graduate and undergraduate TAs to improve teaching skills of new staff members and seasoned veterans – Structured 35 student lab session to review and teach concepts in a specialized alternative to traditional lecture, tailoring for self-regulated learning – Produced class specific help and tip videos to give students an extra resource to common issues in a newer format	<i>Sep 2016 - May 2018</i>
	Robotics Software Intern at TRACLabs , Houston, TX – Adapted local mapping and navigation to move TRACBot, a mobile-manipulator, to maneuver dynamically through obstacles such as doors and people in order to reach/use items in Affordance Template library – Refitted and rebuilt action server nodes into custom system to perform dynamic re-planning based on real time observations	<i>Summer 2017</i>
STUDENT RESEARCH MENTORING	Current Undergraduates – Roxanna Pakkar USC Electrical Engineering, Merit Research Fellow – Zhonghao Shi USC Computer Science – Chloe Kuo USC Computer Science, Merit Research Fellow – Julia Cordero USC Computer Science, Merit Research Fellow – Roddur Dasgupta USC Computer Science – Haemin Lee USC Computer Science – Kartik Mahajan USC Computer Science	
	Previous Students – Ryan Stevenson USC Computer Science Games – Adnan Karim University of Calgary Computer Science, SURE Student – İpek Gökten High School Student, USC SHINE Program	

– Mena Hassan

High School Student, USC SHINE Program

CONTRIBUTIONS TO GRANT PROPOSALS	NSF NRI 2.0 - Communicate, Share, Adapt: A Mixed Reality Framework for Facilitating Robot Integration and Customization <ul style="list-style-type: none">– Contributed significant ideas and content to proposal based upon ongoing Ph.D. work in Mixed Reality SAR– Research grant awarded in fall 2019
K-12 EDUCATIONAL OUTREACH	Microsoft TEALS Teaching Volunteer Los Angeles Center for Enriched Studies, Los Angeles, CA <i>July 2019-Present</i> USC Robotics Academy Judge University of Southern California, Los Angeles, CA <i>Dec 2018/19, Apr 2019</i> Robotics Family Night Monterey Hills Elementary, Los Angeles, CA <i>May 2019, Nov 2019</i> The Help Group STEM³ Academy Visit STEM ³ Academy, Los Angeles, CA <i>June 2019</i> VEX Robotics Team Leader Clifford Street Elementary, Los Angeles, CA <i>Oct 2018 - Feb 2019</i>
HONORS AND AWARDS	USC Robotics George Bekey Service Award <i>May 2019</i>
PUBLICATIONS	<ul style="list-style-type: none">[1] Naomi T. Fitter, Luke M. Rush, Elizabeth Cha, Thomas R. Groechel, Maja J. Matarić, and Leila Takayama “Closeness is Key over Long Distances: Effects of Interpersonal Closeness on Telepresence Experience”, Accepted in <i>2020 ACM/IEEE International Conference on Human Robot Interaction (HRI '20)</i>, Cambridge, UK, Mar-2020.[2] Tom Williams, Daniel Szafir, Tathagata Chakraborti, Ong Soh Khim, Eric Rosen, Serena Booth, Thomas R. Groechel, “Virtual, Augmented, and Mixed Reality for Human-Robot Interaction (VAM-HRI)”, Accepted in <i>Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (Companion-HRI '20)</i>, Cambridge, UK, Mar-2020.[3] Matthew Rueben, Thomas R. Groechel, Yulun Zhang, Gisele Ragusa, Maja J. Matarić “Increasing Telepresence Robot Operator Awareness of Speaking Volume Appropriateness: Initial Model Development”, Accepted in <i>Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (Companion-HRI '20)</i>, Cambridge, UK, Mar-2020.[4] Thomas R. Groechel, Zhonghao Shi, Roxanna Pakkar, and Maja J. Matarić “Using Socially Expressive Mixed Reality Arms for Enhancing Low-Expressivity Robots”, In <i>2019 IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN '19)</i>, New Delhi, India, Oct-2019. <i>Robotics Society of Japan and Korean Robotics Society Distinguished Interdisciplinary Research Award Finalist (3 nominated out of 206)</i>
TALKS AND DEMOS	Human-Robot Interaction & Socially Assistive Robots Laguna Woods Village, Laguna Woods, CA <i>19 Feb 2020</i> USC Robotics Visions & Voices: Emotionally Intelligent Robots Demo University of Southern California, Los Angeles, CA <i>24 Oct 2019</i> SAR Through Augmented Reality Extensions Demo and Discussion Public Affairs Council, Laguna Beach, CA <i>8-9 Jan 2019</i>

PROFESSIONAL
SERVICE

Workshop Organizer

- “The Third International Workshop on Virtual, Augmented, and Mixed Reality for Human-Robot Interaction (VAM-HRI)”, Accepted *2020 ACM/IEEE International Conference on Human Robot Interaction (HRI '20)*

Tutorial Organizer

- “Situating Multi-modal Mixed Reality Human-Robot Interaction”, Accepted *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '20)*

Reviewer

- VAM-HRI Workshop at HRI 2020
- Science Robotics 2018

Women in US Academic Research in Robotics Website *July 2019 - Present*

- Designed and implemented, under Prof. Matarić’s supervision, an actively curated and monitored list of current women in US academic robotics research
- Link: us-women-in-robotics-research.github.io