

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	Graduate Researcher, 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, 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 TRAC Labs , 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	
	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 – Outlined and contributed significant text to proposal based upon Ph.D. work in Mixed Reality SAR – Research grant awarded
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	[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] 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	USC Robotics Visions & Voices: Emotionally Intelligent Robots Demo University of Southern California <i>24 Oct 2019</i> SAR Through Augmented Reality Extensions Demo and Discussion Public Affairs Council in 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 <i>2020 ACM/IEEE International Conference on Human Robot Interaction (HRI '20)</i> Tutorial Organizer – “Situating Multi-modal Mixed Reality Human-Robot Interaction”, Accepted <i>2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '20)</i> Reviewer – Science Robotics 2018 Women in US Academic Research in Robotics Website <i>July 2019 - Present</i> – 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