

## Thomas R Groechel

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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	<b>University of Southern California</b> , Los Angeles, CA – Ph.D. Computer Science, – Research Advisor: Professor Maja J. Matarić	<i>July 2018 - Present</i>
	<b>University of Michigan</b> , Ann Arbor, MI – B.S.E. Computer Science – Undergraduate Research Advisor: Professor Odest C. Jenkins	<i>Sep 2014 - May 2018</i>
EXPERIENCE	<b>Graduate Researcher, Interaction Lab</b> , 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>
	<b>UG Researcher, 4Progress Lab</b> , 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>
	<b>Staff Development Czar and TA</b> , 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>
	<b>Robotics Software Intern at TRAC Labs</b> , 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	<b>Current Undergraduates</b> – Roxanna Pakkar – Zhonghao Shi – Chloe Kuo – Julia Cordero – Roddur Dasgupta – Haemin Lee	USC Electrical Engineering, Merit Research Fellow USC Computer Science USC Computer Science, Merit Research Fellow USC Computer Science, Merit Research Fellow USC Computer Science USC Computer Science
	<b>Previous Students</b> – Ryan Stevenson – Adnan Karim – İpek Gökten – Mena Hassan	USC Computer Science Games University of Calgary Computer Science, SURE Student High School Student, USC SHINE Program High School Student, USC SHINE Program

CONTRIBUTIONS TO GRANT PROPOSALS	<b>NSF NRI 2.0 - Communicate, Share, Adapt: A Mixed Reality Framework for Facilitating Robot Integration and Customization</b> <ul style="list-style-type: none"> <li>– Outlined and contributed significant text to proposal</li> <li>– Research grant awarded and based upon Ph.D. work in Augmented Reality SAR</li> </ul>
K-12 EDUCATIONAL OUTREACH	<b>Microsoft TEALS Teaching Volunteer</b> <i>July 2019-Present</i> Los Angeles Center for Enriched Studies, Los Angeles, CA <b>USC Robotics Academy Judge</b> University of Southern California, Los Angeles, CA <i>Dec 2018/19, Apr 2019</i> <b>Robotics Family Night</b> Monterey Hills Elementary, Los Angeles, CA <i>May 2019, Nov 2019</i> <b>The Help Group STEM<sup>3</sup> Academy Visit</b> STEM <sup>3</sup> Academy, Los Angeles, CA <i>June 2019</i> <b>VEX Robotics Team Leader</b> Clifford Street Elementary, Los Angeles, CA <i>Oct 2018 - Feb 2019</i>
HONORS AND AWARDS	<b>USC Robotics George Bekey Service Award</b> <i>May 2019</i>
PUBLICATIONS	<p>[1] Naomi T. Fitter, Luke M. Rush, Elizabeth Cha, <b>Thomas R. Groechel</b>, 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.</p> <p>[2] <b>Thomas R. Groechel</b>, 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></p>
TALKS AND DEMOS	<b>USC Robotics Visions &amp; Voices: Emotionally Intelligent Robots Demo</b> <i>24 Oct 2019</i> University of Southern California <b>SAR Through Augmented Reality Extensions Demo and Discussion</b> <i>8-9 Jan 2019</i> Public Affairs Council in Laguna Beach, CA
PROFESSIONAL SERVICE	<b>Workshop Organizer</b> <ul style="list-style-type: none"> <li>– “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></li> </ul> <b>Tutorial Organizer</b> <ul style="list-style-type: none"> <li>– “Physically Situating Multi-modal Mixed Reality Human-Robot Interaction”, Accepted <i>2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '20)</i></li> </ul> <b>Reviewer for these Conferences and Journals</b> <ul style="list-style-type: none"> <li>– Science Robotics 2018</li> </ul> <b>Women in US Academic Research in Robotics Website</b> <i>July 2019 - Present</i> <ul style="list-style-type: none"> <li>– Created and maintain a list of current women in US academic robotics research</li> <li>– Link: <a href="https://us-women-in-robotics-research.github.io">us-women-in-robotics-research.github.io</a></li> </ul>