ALEXIS E. BLOCK

Last updated June 20, 2023
Work: 7400 Boelter Hall ◇ Los Angeles, CA 90095 USA
+1 (414) 232 - 7754 ◇ alexiseblock@ucla.edu

EDUCATION

Dr. sc. Computer Science July 2017 – August 2021
Max Planck Institute for Intelligent Systems *Stuttgart, Germany*
Doctoral Dissertation: HuggieBot: An Interactive Hugging Robot with Visual and Haptic Perception (Defended: 12 August 2021)
Advisor: Katherine J. Kuchenbecker
ETH Zurich *Zurich, Switzerland*
Co-Advisors: Roger Gassert, Otmar Hilliges

M.S.E. in Robotics August 2015 – May 2017
University of Pennsylvania *Philadelphia, USA*
Master's Thesis: How Should Robots Hug?
Thesis Advisor: Katherine J. Kuchenbecker

B.S.E. in Mechanical Engineering & Applied Mechanics August 2012 – May 2016
University of Pennsylvania *Philadelphia, USA*
Cum Laude
Minor in Mathematics
Minor in Engineering Entrepreneurship

POSITIONS HELD

2023 - Present	Assistant Professor, Electrical, Computer, and Systems Engineering Department, Case Western Reserve University
2021 - 2023	Postdoctoral Research Fellow, Department of Mechanical and Aerospace Engineering, University of California Los Angeles, Advisor: Veronica J. Santos
2018 - 2020	Teaching Assistant, Department of Computer Science, ETH Zurich

SELECTED HONORS AND AWARDS

2023	Nominated and invited as a speaker for the inaugural "**Microsoft Future Leaders in Robotics and AI**" seminar series, organized by the Maryland Robotics Center
2022	Elected and currently serving as the co-chair for 2024 Robotics Gordon Research Seminar
2022	**1st Place Best Hands-On-Demonstration (with co-authors) at EuroHaptics 2022**
2022	**Awarded the Max Planck Society Otto Hahn Medal** for outstanding scientific achievement by junior scientists
2022	Selected for the Robotics Gordon Research Seminar and Conference
2021	**Awarded a two-year Post-Doctoral Computing Innovation Fellowship**
2021	Selected as a member of Silbersalz AI Media Lab
2021	Selected as a member of ConceptionX Cohort IV, awarded both the Star award (people's choice best elevator pitch) and Rocket award (leadership's selection best startup)
2020	Named a 2020 Rising Star in Mechanical Engineering

2019	ROSCon Diversity Scholarship Recipient
2019	**Elected and served as the co-chair for 2019 HRI Pioneers**
2018	**Selected as a 2018 HRI Pioneer**
2017-2021	IMPRS-IS Associated Student
2016	**Penn Alumni Association Student Award of Merit**
2016	NSF Graduate Research Fellowship Honorable Mention
2016	Finalist for the Penn President's Innovation Prize
2016	Selected to accompany Penn President in London to represent innovation and research
2016	Cum Laude Graduation Honor
2015-2016	Dean's List
2012-2016	University Scholar for exceptional independent research
2010	Society of Experimental Test Pilots Award at the Intel International Science and Engineering Fair
2009	2nd Place Air Force Award at the Intel International Science and Engineering Fair

PUBLICATIONS

Unpublished Papers (In Preparation and Under Review)

[U4] Alexis E. Block, Evan Harber, Max Kramer, and Veronica J. Santos. **Multimodal Sensorized Suction Cups for Manipulation** In preparation.

[U3] Alexis E. Block, Aileen Villalpando, Ryan Ling, Jacob Serber, Max Kramer, and Veronica J. Santos. **Companion to the DIGIT QuickStart Guide** In preparation.

[U2] Alireza Haji Fathaliyan, Xiaoyu Wang, Huajing Zhao, Alexis E. Block, and Veronica J. Santos. **Effects of Uncertainty in Robot Competence on Human Trust in Automated Systems** In preparation for submission.

[U1] Alexis E. Block, Shari Young Kuchenbecker, Roger Gassert, Otmar Hilliges and Katherine J. Kuchenbecker. **Hugs from HuggieBot Provide Similar Benefits and Enjoyment as those Derived from Another Person** In preparation for submission to *Science Robotics.* (Adapted from Chapter 7 of doctoral dissertation.)

Journal Articles

[J2] Alexis E. Block, Hasti Seifi, Otmar Hilliges, Roger Gassert, and Katherine J. Kuchenbecker. **In the Arms of a Robot: Designing Autonomous Hugging Robots with Intra-Hug Gestures.** *ACM Transactions on Human-Robot Interaction (THRI) Special Issue on Affect and Embodiment in HRI.* Accepted 2022. https://dl.acm.org/doi/10.1145/3526110

[J1] Alexis E. Block and Katherine J. Kuchenbecker. **Softness, Warmth, and Responsiveness Improve Robot Hug Quality.** *International Journal of Social Robotics,* October 2018. https://doi.org/10.1007/s12369-018-0495-2

Peer-Reviewed Conference Papers

[C2] Alexis E. Block, Sammy Christen, Otmar Hilliges, Roger Gassert, and Katherine J. Kuchenbecker. **The Six Hug Commandments: Design and Evaluation of a Human-Sized Hugging Robot with Visual and Haptic Perception.** In *Proc. ACM/IEEE International Conference on Human-Robot Interaction (HRI),* pages 380-388, Boulder, Colorado, USA, March 2021. https://doi.org/10.1145/3434073.3444656

[C1] Jennifer C. T. Hui, Alexis E. Block, Camillo J. Taylor, and Katherine J. Kuchenbecker. **Robust Tactile Perception of Artificial Tumors Using Pairwise Comparisons of Sensor Array**

Readings. In *Proc. IEEE Haptics Symposium,* pages 305-312, Philadelphia, Pennsylvania, USA, April 2016. https://doi.org/10.1109/HAPTICS.2016.7463194

Short Peer-Reviewed Conference and Workshop Papers and Abstracts

[S10] Huajing Zhao*, Alexis E. Block*, and Veronica J. Santos. **Smart Dressing: Tactile-driven Assistive Robot for Garment Button Fastening**. Huajing presented at the *HRI Workshop on Workshop YOUR study design! Participatory critique and refinement of participants' studies* held in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI), March 2022. Workshop paper. *Huajing Zhao and Alexis E. Block contributed equally to this publication.

[S9] Lionel Zhang, Alexis E. Block, and Veronica J. Santos. **Haptic Shared Autonomy for Teleoperation**. Lionel presented at the *HRI Workshop on Workshop YOUR study design! Participatory critique and refinement of participants' studies* held in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI), March 2022. Workshop paper.

[S8] Alexis E. Block, Shari Young Kuchenbecker, Olivier Lambercy, Roger Gassert, and Katherine J. Kuchenbecker. **Love, Actually? Robot Hugs, Oxytocin, and Cortisol**. Alexis presented at the *HRI Workshop on Workshop YOUR study design! Participatory critique and refinement of participants' studies* held in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI), March 2021. Workshop paper (5 pages).

[S7] Alexis E. Block, Otmar Hilliges, Roger Gassert, and Katherine J. Kuchenbecker. **Using Affective Touch for Emotional Support with a Hugging Robot**. In *Proc. of the Affect and Embodiment in HRI Workshop* held in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI), Cambridge, UK, March 2020.

[S6] Alexis E. Block and Katherine J. Kuchenbecker. **HuggieChest: An Inflatable Haptic Sensing Chest for a Hugging Robot**. In *Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),* November 2019. Workshop paper.

[S5] Alexis E. Block and Katherine J. Kuchenbecker. **Inflatable Haptic Sensor for the Torso of a Hugging Robot** In *Proc. IEEE World Haptics Conference,* July 2019. Work-in-progress paper.

[S4] Alexis E. Block and Katherine J. Kuchenbecker. **Emotionally Supporting Humans Through Robot Hugs**. In *Proc. of the HRI Pioneers Workshop* held in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI), Chicago, Illinois, USA, March 2018. https://doi.org/10.1145/3173386.3176905

[S3] Alexis E. Block and Katherine J. Kuchenbecker. **Physical and Behavioral Factors Improve Robot Hug Quality.** In *Proc. IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN),* August 2017. Workshop paper.

[S2] Alexis E. Block and Katherine J. Kuchenbecker. **How Should Robots Hug?** In *Proc. IEEE World Haptics Conference,* June 2017. Work-in-progress paper.

[S1] Jennifer C. T. Hui, Alexis E. Block, and Katherine J. Kuchenbecker. **Detecting Lumps in Simulated Tissue via Palpation with a BioTac.** In *Proc. IEEE World Haptics Conference,* June 2015. Work-in-progress paper.

Hands-On Demonstrations

[D1 Alexis E. Block, Hasti Seifi, Sammy Christen, Bernard Javot, and Katherine J. Kuchenbecker. **HuggieBot: A Human-Sized Haptic Interface**. Hands-on demonstration presented at EuroHaptics, Hamburg, Germany, May 2022. *Best Demonstration Award as voted by the Demonstration Committee.*

GRANTS

Present

1. Computing Innovation Fellows (CIFellows)
   Mobile Social-Physical Human-Robot Interaction and Embodiment
   Role: Principal Investigator — Supervisor: Veronica J. Santos, UCLA
   Sponsor: National Science Foundation (NSF), Computing Research Association (CRA), and Computing Community Consortium (CCC) — Funding: $150,000 ($75,000/year, for two years)
   Dates: 1 September 2021 - 1 September 2023

Past

1. TCH Innovation in Haptics
   Inflatable Torso Sensor for a Hugging Robot
   Role: Principal Investigator — Co-PIs: None
   Sponsor: IEEE RAS Technical Committee on Haptics — Funding: $2,500
   Dates: 30 November 2018 - 30 November 2019

RESEARCH PRESENTATIONS

Invited Talks at Academic Conferences

3. "Emotional Support Robots: Designing the Interactive Hug Experience" Gordon Research Seminar. *Invited talk and panelist.* Ventura, USA. 13-19 August 2022.

2. "HuggieBot: An Interactive Hugging Robot for Emotional Support." *Keynote.* The IEEE International Conference on Advanced Robotics and its Social Impacts (ARSO) held in conjunction with the IEEE International Conference on Robotics and Automation (ICRA) 2022. Long Beach, USA. 28-30 May 2022.

1. "From Rosie to Baymax: Translating Our Most Huggable Characters To Real Life." *Keynote.* EUROSIS International Conference on Science Fiction Prototyping. Ghent, Belgium. 1-3 April 2019.

Talks at Academic Conferences and Workshops

6. "The Six Hug Commandments: Design and Evaluation of a Human-Sized Hugging Robot with Visual and Haptic Perception." Oral Presentation at the ACM/IEEE International Conference on Human-Robot Interaction (HRI). Held Virtually. 8-11 March 2021.

5. "Emotionally Supporting Humans Through Robot Hugs." Poster and Oral Presentation at the HRI Pioneers Workshop (held in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI)). Chicago, IL, USA, 5-8 March 2018.

4. "How Should Robots Hug?" Poster Presentation at the IEEE World Haptics Conference (WHC). Fuerstenfeldbruch (Munich), Germany, 6-9 June 2017

3. "Physical and Behavioral Factors Improve Robot Hug Quality." Oral Presentation at the IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) Workshop. Lisbon, Portugal, 28 August - 1 September 2017

2. "Characterizing Wall Effect Forces on Quadrotors towards Performing Work on Vertical Surfaces." Army Research Lab Summer Graduate Student Symposium. Aberdeen MD, USA, 29 July 2016.

1. "A Study of Robotic Palpation for Automatic Characterization of Tumors Embedded in Simulated Tissue." Columbia Undergraduate Science Journal's Research Symposium. New York, NY, USA, 26 April 2015.

Talks in Academic Settings

8. "HuggieBot 2.0: A More Huggable Robot." CLS Annual Fellows Retreat Presentation. Insel Reichenau, Germany, 16 October 2018.
7. "Do You Want to Hug a Robot?" MPI-IS Retreat Science Slam Presentation. Wertach, Germany, 31 January 2018.
6. "Physical and Behavioral Factors Improve Robot Hug Quality." CLS Annual Fellows Retreat Presentation. Stoos, Switzerland, 5 October 2017.
5. "Physical and Behavioral Factors Improve Robot Hug Quality." Robotics Master's Thesis Defense. Philadelphia, PA, USA. 1 May 2017.
4. "HuggieBot: Advancing Human-Robot Interaction to Improve Mental Health." CLS Interview Presentation. Tuebingen, Germany, 19 January 2017.
3. "PoDSaR: Portable Distributed Search and Report." Mechanical Engineering and Applied Mechanics Senior Design Presentations. Philadelphia, PA, USA, 18 April 2016
2. "Detecting Lumps in Simulated Tissue via Palpation with a Biotac." University Scholars Research Talk. Philadelphia, PA, USA, 4 September 2015
1. "A Study of Robotic Palpation for Automatic Characterization of Tumors Embedded in Simulated Tissue." University Scholars Research Talk. Philadelphia, PA, USA, 5 September 2014

Invited Talks for Broader Audiences

6. "Let Your Passion be the Innovator of Your Own Life Cycle." Session in the Jewish Changemakers Fellowship Program. Invited Guest Speaker. Zoom. 7 July 2020 and 4 August 2020.
5. "Man and the Machine." Berlin Science Week. Invited Guest Speaker. Berlin, Germany. 7 November 2019.
4. "Society 2.0: Understanding The Human-Robot Connection in Improving the World. A Fireside Chat: Oliver Mitchell and Alexis E. Block." SOSA NYC and Birthright Israel Excel Fireside Chat. Invited Guest Speaker. New York, New York, USA. 16 May 2019.
3. "How HuggieBot Took the Internet by Storm." Exelerate18, Birthright Israel Excel Annual Summit. Invited talk. New York, New York, USA. 2-4 November 2018.
2. "Our Penn: Let the Conversations Begin." Penn Compact 2020: Inclusion, Innovation, and Impact. Invited Guest Speaker. London, England, 7 March 2016
1. "The Importance of Funding Independent Student Research." Penn Parent Salon. Invited Guest Speaker. Los Angeles, CA, USA, October 20 2015

EDUCATIONAL PRESENTATIONS AND WORKSHOPS

Technical Lectures for Students, Alumni, Parents, and Other Groups

14. "Talk Title TBD" *Invited talk,* seminar series in the Contextual Robotics Institute, University of California, San Diego, USA. [rescheduled - date to be confirmed].
13. "Design and Control of a Hugging Robot" Guest lecture, 163C/263C: Control of Robotic Systems, Graduate/Undergraduate course in the Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, USA. 8 June 2023.
12. "HuggieBot: Design and Evaluation of an Interactive Hugging Robot with Visual and Haptic Perception " *Invited talk,* Future Leaders in Robotics and AI Seminar Series, Virtual. 3 March 2023.

11. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Mechanical and Aerospace Engineering Department Seminar, University of California, Los Angeles, USA. 8 March 2023.
10. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Department of Computer Science and Operations Research Seminar, Université de Montréal, Montréal, Canada. 21 February 2023.
9. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Department of Electrical, Computer, and Systems Engineering Colloquium Series, Case Western Reserve University, Cleveland, USA. 14 February 2023.
8. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* School of Manufacturing Systems and Networks Seminar, Arizona State University, Mesa, USA. 7 February 2023.
7. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Mechanical Engineering Department Seminar, Rice University, USA. 30 January 2023.
6. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Robotics Engineering Department Seminar, Worcester Polytechnic Institute, Worcester, USA. 27 January 2023.
5. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* School for Engineering of Matter, Transport & Energy Seminar, Arizona State University, Tempe, USA. 23 January 2023.
4. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Mechanical Engineering Seminar, The Technion, Israel. 9 January 2023.
3. "Towards Enhanced Social-Physical Human-Robot Interaction" *Invited talk,* Computer Science Department Colloquium, University of Southern California (USC), USA. 7 December 2022.
2. "Emerging HRI Technologies and Applications" Guest lecture, CSE598: Emerging Interface Technologies, Graduate course in the School of Computing and Augmented Intelligence (SCAI), Arizona State University, USA. 22 November 2022.
1. "Design and Control of a Hugging Robot" Guest lecture, 163C/263C: Control of Robotic Systems, Graduate/Undergraduate course in the Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, USA. 1 June 2022.

TEACHING EXPERIENCE

ETH Zurich — Zurich, Switzerland

- Teaching Assistant, Human-Computer Interaction — August 2019 – February 2020
- Teaching Assistant, Human-Computer Interaction — August 2018 – February 2019
- ETH Zurich Educational Development Teaching Certificate — September 2018

Max Planck Institute for Intelligent Systems — Stuttgart, Germany

- Private Tutor (Dynamics, Physics, Calculus, ACT Prep) — August 2017 – August 2019

University of Pennsylvania — Philadelphia, USA

- Private Tutor (Dynamics, Physics, Calculus, ACT Prep) — August 2016 – May 2017
- Teaching Assistant, Project Management, ESE544 — January 2017 – May 2017
- Teaching Assistant, Mechatronics, MEAM510 — August 2016 – December 2016

DIVERSITY & OUTREACH

Max Planck ETH Center for Learning Systems

- Center for Learning Systems Ph.D. Program

– Co-founder of Student Representatives organization 16 October 2018
– Elected Student Representative October 2018 - July 2020

· Max Planck Institute for Intelligent Systems
– Co-founder and co-leader Athena Female Scientists' Group September 2017 - July 2018
– Elected Ph.D. Representative December 2017 - July 2018

University of Pennsylvania

· Advancing Women in Engineering Board
– Student Advisor & Assistant to the Director September 2012 – May 2017
. Collaborated with the director to develop a variety of STEM programs and activities for college freshmen female engineers, high school, and middle school students to stimulate interest in STEM.

RESEARCH ADVISING AND MENTORSHIP

Feb 2022: CIMER/NRMN Training in Effective Research Mentorship for Postdocs and Future Faculty

Graduate

11. Maya Sitaram: Master's student at John's Hopkin's University, interning at the Max Planck Institute for Intelligent Systems, May 2022 - August 2022 (now Master's student at John's Hopkin's University)
10. Cole Ten: Ph.D. student at UCLA, Summer 2022 - Present
9. Jimmy Penaloza: Ph.D. student at UCLA, Jan 2022 - Present
8. Ali Haji Fathaliyan: Ph.D. candidate at UCLA, Fall 2021 - February 2022 (now Senior Manager of Data Science at Dotdash Meredith Corporation)
7. Huajing Zhao: Ph.D. student at UCLA, Fall 2021 - Present (co-authored paper)
6. Jonathan Bopp: Master's student at UCLA, Summer 2021 - Present
5. Lionel Zhang: Ph.D. candidate at UCLA, Summer 2021 - Present (co-authored paper)
4. Xiaoyu Wang: Ph.D. candidate at UCLA, Summer 2021 (now Assistant Professor at Southeast University, China)
3. Aileen Villalpando: Master's student at UCLA, Summer 2021 - Summer 2022 (now at SpaceX)
2. Eric Peltola: Ph.D. candidate at UCLA, Summer 2021 - August 2022 (now at Horizon Surgical)
1. Ryan Ling: Master's student at UCLA, Summer 2021 - Present

Undergraduate

5. Laura Huang: Bachelor Student at UCLA, Spring 2023 - Summer 2023 at UCLA
4. Alex Hadidi: Bachelor student at UCLA, Fall 2022 - Summer 2023
3. Jacob Serber: Bachelor student at UCLA, Summer 2021 - Summer 2022 (now Master's student in the Biomechatronics Lab at UCLA)
2. Cole Ten: Bachelor student at UCLA, Summer 2021 - Summer 2022 (now Ph.D. student in Biomechatronics Lab at UCLA)
1. Christoph Ricklin: Bachelor thesis student at ETH, Fall 2019 (now Consultant / System Engineer at PPI Schweiz)

High School

1. Max Kramer: High school student interning at UCLA, Summer 2021 - Summer 2023 (now an undergraduate student at Carnegie Mellon University)

MEDIA HIGHLIGHTS

2 February 2023	Science News Explores published an article titled "Can a robot ever become your friend?" featuring quotes from Alexis and describing her HuggieBot research
29 January 2023	Metro World News published an article about Alexis and HuggieBot 3.0 and "the perfect hug."
3 January 2023	The Moncrieff Show on NewsTalk National Radio in Ireland did an 8-minute interview with Alexis on live radio about HuggieBot
15 November 2022	Heise Magazine - **MIT Technology Review** published an article (page 95) about HuggieBot 3.0 and its novel interactive capabilities. The journalist tried and tested HuggieBot and wrote about their experience **"the hug feels surprisingly real."**
4 November 2022	UCLA Newsroom published an article featuring quotes from Alexis about the Southern California Robotics Symposium she organized.
10 August 2022	Computing Community Consortium/Computing Research Association published a CIFellows spotlight featuring Alexis Block. It highlighted both her doctoral work with HuggieBot and her current research on mobile social-physical human-robot interaction and embodiment.
24 June 2022	Stuttgarter Zeitung published an article and Regio TV released a clip about the Stuttgart Science Festival highlighting several exhibits; HuggieBot was featured in both press items.
22 June 2022	Stuttgarter Zeitung published and article about HuggieBot in anticipation of its demonstration in the Stuttgart Science Festival
26 May 2022	**Nature Outlook** published an article titled "Teaching robots to touch" featuring several researchers and robots and highlighted HuggieBot
1 April 2022	ETH Zurich published a press release about Alexis winning an Otto Hahn Medal for her doctoral dissertation on HuggieBot
31 March 2022	**IEEE Spectrum** published an article titled "The 11 Commandments of Hugging Robots: How to build a humanoid that gives perfect hugs" describing a 2021 HRI paper and 2022 THRI paper focusing on HuggieBot 3.0 and featuring a lengthy interview with Alexis
31 March 2022	Max Planck Institute for Intelligent Systems published a press release about Alexis winning an Otto Hahn Medal for her doctoral dissertation on HuggieBot
12 & 13 January 2022	PM WISSEN, Servus TV (broadcast on TV in Germany and Austria), HuggieBot was featured in a short sequence in a film titled "Wie funktioniert Unterricht per Avatar? ("How does teaching via avatar work?")
12 January 2022	Max Planck Forschung (Max Planck Institute Magazine) published an article about research in the Haptic Intelligence Department and heavily featured HuggieBot
21 July 2021	Women's Wealth: The Middle Way podcast aired an episode called "Inventing Her Way To Success" featuring an interview with Alexis
12 July 2021	The Next Byte engineering podcast by Wevolver aired an episode discussing Alexis and her HuggieBot research called "26. Hugging Robots, Scalable Solar Fuel, Non-Invasive Spinal Implants"
8 July 2021	The Current (Canadian Broadcasting Corporation) did a story about huggingin-terviewed Alexis to learn about HuggieBot, why she made it and how it would succeed after the pandemic.

29 June 2021	Globe Magazine (Quarterly Magazine of ETH Zurich) edition 2/2021 had a focus piece called "Robots for Comfort and Counsel" featuring an in-depth interview of Alexis and her work on the evolution of HuggieBot and the Six Hug Commandments
10 March 2021	Entrepreneur.com published an article titled "What to Do If People Laugh at Your Idea" about Alexis E. Block and HuggieBot 3.0
11 February 2021	TechXplore published an article titled "HuggieBot 2.0: A Soft and Human-Size Robot That Hugs Users on Request" with an interview with Alexis focusing on the Six Hug Commandments HRI 2021 Paper
16 January 2021	SWR TV (German TV News Station) filmed and aired an interview with Alexis E. Block, Katherine J. Kuchenbecker and a live demo of HuggieBot 3.0
December 2020	PM Magazin (German Science Magazine) published an article titled "Touched by a Robot" about Alexis E. Block and HuggieBot 2.0
16 October 2020	**The New York Times** published an article titled "When We Can Hug Again, Will We Remember How It Works?" featuring with an interview with Alexis and discussion of HuggieBot
15 October 2020	Double Helix (Australian Science Magazine) published an article titled "The Comfort of Robot Hugs" about Alexis E. Block and HuggieBot 2.0
6 December 2019	Stuttgarter Zeitung published an article with an interview of Alexis E. Block's research and focused on the new version of HuggieBot 2.0, in German: "Ein Roboter spendet Trost"
27 May 2019	The Robot Report published an article with an interview about Alexis E. Block's research and recent invited talk: "ETH Zurich Researcher Works to Build Human-Machine Trust, One Robotic Hug at a Time"
26 May 2019	STEM On Fire interviewed Alexis E. Block for their podcast to encourage high-school juniors and seniors and college freshmen and sophomores to study STEM
30 August 2018	NowThis Future Media created a short video using experimental footage and a summary of the experimental procedure and results published in HRI Pioneers paper that reached over 500,000 views
16 June 2018	NPR (National Public Radio) HuggieBot was featured as a question on NPR's "Wait Wait Don't Tell Me" game show
15 June 2018	The Paul Ross Show did an 11 minute interview with Alexis E. Block that was broadcast on TalkRadio in the UK
12 June 2018	**The Times** (UK Newspaper) published an article written about HuggieBot featuring an interview with Alexis E. Block: "Feel the Love with a Robo-Hug That's Better Than the Real Thing"
11 June 2018	NBC News published an article written about HuggieBot featuring an interview with Alexis E. Block: "Why Scientists are Teaching this Burly Robot to Hug"
7 June 2018	Digital Trends published an article written about HuggieBot featuring an interview with Alexis E. Block: "Forget Roomba, Your Most Important House Robot Could be the One that Hugs You"
5 June 2018	**IEEE Spectrum** published a long article written about HuggieBot featuring an interview with Alexis E. Block: "The Importance of Teaching Robots to Hug"

PROJECT AND RESEARCH EXPERIENCE

UCLA - Biomechatronics Lab August 2021 - Present

Advised by Veronica J. Santos

· Vision-based tactile sensor development
  – Leading a team of 2 students (1 Ph.D. student, 1 high school student), to add custom multimodal sensorization to the suction cups of the gripper of the "Stretch" robot (Hello Robot) for manipula-

tion. We are also creating custom suction cups with three-dimensional papillae for visual tracking of the deformations of the cup.
  - Leading a team of 4 students (1 Ph.D. student, 1 Master's student, 1 undergraduate student, and 1 high school student), to build and upgrade Facebook DIGITs by adding trackable markers to the surface of the gel. We have also been documenting the manufacturing process and are writing an open-access companion paper to aid future researchers in the creation of DIGITs.

· Teleoperation of a mobile manipulator with touch
  - Using the "Stretch" robot (Hello Robot) to create a low-cost, easily deployable, teleoperated system that allows its human operators to interact fully and feel like an equally embodied agent from anywhere in the world. Working to enable medically vulnerable populations to engage in community activities, allow remote workers to perform physical, dexterous tasks from anywhere in the world, and enable loved ones to provide affective touch to infected and vulnerable individuals.
  - Upgraded the "Stretch" robot to compete in the international ANA Avatar XPRIZE Competition Semi-Finals.

MPI-IS (Haptic Intelligence Department)/ETH Zurich (AIT Lab and RELab) July 2017 – August 2021

· HuggieBot: An Interactive Hugging Robot with Visual and Haptic Perception - Doctoral Dissertation Defended 12 August 2021
Advised by Katherine J. Kuchenbecker, Co-Advised by Otmar Hilliges and Roger Gassert
  - [HuggieBot 1.0] Conducted statistical analyses of previously collected data from experiment conducted during my master's thesis. Wrote and published a journal article on findings.
  - [HuggieBot 2.0] Designed, built, programmed, and extensively tested a novel, fully-integrated robotic platform. Created a novel, inflatable sensing torso for HuggieBot to simultaneously soften the robot and sense user contacts. Wrote and published a conference paper on new system and validation.
  - [HuggieBot 3.0] Created a detection and classification algorithm and a probabilistic behavioral algorithm that works in real-time to differentiate when a user rubs, pats, or squeezes the robot, and has it respond appropriately. Wrote a journal article that is currently under review pending minor revisions on two user studies and validation of new robot behavior.
  - [HuggieBot 4.0] Conducted a large scale user study collecting emotional and physiological data comparing hugging a person and hugging a robot. Currently working on writing a journal article for publication on the results.

GRASP Lab, Haptics Group May 2014 – May 2017

· How Should Robots Hug? - Master's Thesis September 2016 – May 2017
Advised by Katherine J. Kuchenbecker
  - [HuggieBot 1.0] Through hardware and software upgrades, I warmed and softened the outside of the Willow Garage PR2 (Personal Robot 2), endowed it with tactile sensors, and enabled it to match the desired pressure and duration for a perfect hug.

· Automatic Palpation May 2014 – May 2016
  - Worked on a system that allows surgeons to palpate tissue in minimally invasive surgery and discern in real time the approximate size and location of tumors and other abnormalities

Undergraduate Course Projects September 2013 – May 2016

· PoDSaR - Senior Capstone August 2015 – May 2016
  - Served as team leader of the project for the entire year
  - Developed a robust, portable, distributive, search and report robotic platform to canvas buildings after collapses, find and relay the path to reach victims, and report on several conditions inside the building. A four-person interdisciplinary senior design project hosted in the MEAM department.

– Finalists for the 2016 Penn President's Innovation Prize (along with one other team member).

· Robockey September 2015 – December 2015
  – As part of a three-person team, I designed, built, and programmed three fully autonomous robots to play hockey. All programming was done in C and ran on an ARM based microcontroller. The robots communicated wirelessly with a game controller, localized themselves on a rink using a modified Wii sensor, and sensed the puck on the court using IR phototransistors.

WORK EXPERIENCE

Army Research Lab Aberdeen Proving Grounds, USA

· Summer Researcher May 2016 – September 2016

Ernst & Young - Hacktics Tel Aviv, Israel

· Summer Intern June 2015 – September 2015
  – Created a database and GUI for accessing client information. Secured the application so employees (hackers) could not gain unauthorized access. Collaborated with hackers and assisted in vulnerability penetration testing. Wrote technical reports of the status of security for clients. Conducted all work in Hebrew.

Kapur and Associates Glendale, USA

· Year-Long Intern August 2011 – June 2012
  – Learned AutoCad at this civil engineering company. Independently designed a section of a highway.

PROFESSIONAL SERVICE

Conference Organization

· Robotics Gordon Research Seminar
  – 2024 General Chair August 2022 - Present

· SoCal Robotics Symposium
  – 2022 Head of Organizing Committee June 2022 - September 2022
  – Raised $58,000 in 2.5 months

· IEEE Haptics Symposium
  – 2024 Student Volunteer Co-Chair March 2023 - March 2024
  – 2022 "The Importance of Touch for Distributed Embodiment" Cross-Cutting Challenge (CCC) Organizing Committee November 2021 - March 2022
  – 2018 Social Media Chair Student Volunteer March 2018

· IEEE ICRA
  – 2022 Robotics Debates Organizing Committee September 2021 - May 2022

· ACM/IEEE International Conference on Human-Robot Interaction
  – 2019 HRI Pioneers General Chair March 2018 - March 2019

Peer Reviews

· Conference Paper Reviews
  – ACM International Special Interest Group on Computer Graphics and Interactive Techniques Conference and Exhibition (SIGGRAPH), IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN), IEEE EuroHaptics Conference, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), ACM/IEEE International Conference on Human-Robot Interaction (HRI), IEEE World Haptics Conference (WHC)

· Journal Paper Reviews

  - Human Factors: SAGE, Transactions on Haptics, Transactions on Human-Robot Interaction, Frontiers in Robotics and AI, International Journal of Social Robotics, International Journal of Human-Computer Studies, IEEE Robotics and Automation Letters, Computer Animation and Virtual Worlds, Advanced Robotics
- Book/Book Proposal Reviews
  - CRC Press Publish Book Proposal Review

SCIENTIFIC AND PROFESSIONAL SOCIETIES

ACM Association for Computing Machinery

TECHNICAL SKILLS

Computer Languages & Programs	MATLAB, Java, VB.NET, HTML/CSS, SQL, LaTeX, AutoCad, C/C++, Python, G-Code, COMSOL, Solidworks, Simulink
Machines & Hardware	Manual Mill, Laser Cutter, Manual Lathe, Makerbot 3D Printer, ProtoTRAK CNC Mill, Arduino, M2 Microcontroller
Language Skills	English (Fluent), Hebrew (Proficient), German (A2), French (A2)