Stanford

Mark Cutkosky

Fletcher Jones Professor in the School of Engineering

Mechanical Engineering

CONTACT INFORMATION

- **Administrator**

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Bio

BIO

Cutkosky applies analyses, simulations, and experiments to the design and control of robotic hands, tactile sensors, and devices for human/computer interaction. In manufacturing, his work focuses on design tools for rapid prototyping.

ACADEMIC APPOINTMENTS

- Professor, Mechanical Engineering
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Presidential Young Investigator Award, National Science Foundation (1986)
- Anderson Faculty Scholar, Stanford University (1989)
- Charles M. Pigott Professorship, Stanford University (1994-2001)
- Fulbright Distinguished Faculty Chair, SSSA Pisa, Italy (2002)
- Best Inventions of 2006, Time Magazine (2006)
- Fletcher Jones Chair II, Stanford School of Engineering (2011)
- IEEE Fellow, IEEE (2012)
- ASME Fellow, ASME (2014)
- Pioneer in Robotics and Automation Award, IEEE (2024)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Senior Editor, International Journal of Robotics Research (2024 - present)
- Editorial board, Bioinspiration & Biomimetics (2019 - present)

PROFESSIONAL EDUCATION

- PhD, Carnegie Mellon (1985)

PATENTS

- Mark Cutkosky. "United States Patent US 7762362 B2 Climbing with dry adhesives"
- Mark Cutkosky. "United States Patent US 8066088 B2 Biologically inspired climbing device"
- Mark Cutkosky. "United States Patent US 8491665 B2 Skin stretch tactile feedback device"
- Mark Cutkosky. "United States Patent US9517610 B2 Grippers based on opposing van der Waals adhesive pads"
- Mark Cutkosky, Kyung Won Han, Srinivasan Arul Suresh, Andrew Jaworski, and Elliot W. Hawkes. "United States Patent 11375762B2 A glove with dry-adhesive and dry-non-adhesive micro-wedges", Leland Stanford Junior University, Jul 6, 2022
- Cutkosky, M.R., Ruotolo, W., Roberge, J.P. "United States Patent 10,875,190 Patterned and instrumented directional adhesives for enhanced gripping with industrial manipulators", Leland Stanford Junior University, Dec 29, 2020
- Mark Cutkosky. "United States Patent 10,647,004 Air-bladder enhanced with gecko-adhesive for grasping applications", Leland Stanford Junior University, May 12, 2020
- Hawkes, Elliot W., David L. Christensen, Srinivasan Arul Suresh, Mark R. Cutkosky. "United States Patent 10,316,220 Controllable adhesive on conformable film for non-flat surface", Leland Stanford Junior University, Jun 11, 2019
- Wu, Xin Alice, John V. Ulmen, Mark R. Cutkosky. "United States Patent 10,267,690 Capacitive force/torque sensor", Leland Stanford Junior University, Apr 23, 2019
- Mark R. Cutkosky, Paul S Day, Eric V. Eason. "United States Patent US 9908266 B2 Mold Fabrication Method for Gecko-Inspired Adhesives", Leland Stanford Junior University, Mar 6, 2018
- Mark Cutkosky, Atsuo Orita. "United States Patent US 9871183 B2 Electrostrictive element", Honda Motor Co Ltd, Leland Stanford Junior University, Jan 16, 2018
- Mark R. Cutkosky, Atsuo Orita. "United States Patent US 9773969 B2 Electrostrictive element manufacturing method", Honda Motor Co Ltd, Leland Stanford Junior University, Sep 26, 2017
- Paul S Day, Mark R Cutkosky. "United States Patent US 8882996 B2 Micro-structure-based adhesives for size-selective particle trapping and sorting", Leland Stanford Junior University, Nov 11, 2014
- Yong-Lae ParkRichard James BlackBehzad Moslehi, Mark R. Cutkosky, Santhi Elayaperumal, Bruce Daniel, Alan Yeung, Vahid Sotoudeh. "United States Patent US8649847B1 Steerable shape sensing biopsy needle and catheter", Intelligent Fiber Optic Systems Inc, Feb 11, 2014
- Yong-Lae Park, Behzad Moslehi, Richard James Black, Mark R. Cutkosky, Kelvin K Chau. "United States Patent US7903907B1 Force and deflection sensor with shell membrane and optical gratings and method of manufacture", Intelligent Fiber Optic Systems Inc, Mar 8, 2011
- Pratik Kumar Nahata, Tjarko Leifer, Edwin T. Li, Tejas B. Desai, Susan A. Johnson, Mark R. Cutkosky. "United States Patent US6825752B2 Effortless entry system and method", Continental Automotive Systems Inc, Nov 30, 2004
- Mark R. Cutkosky, Eiki Kurokawa. "United States Patent US4545722A Flexible Robot Gripper for Irregular Shapes", Westinghouse Electric Corp, Oct 8, 1985
- Mark R. Cutkosky, Paul K. Wright. "United States Patent 4,458,424 Compliance System for Industrial Manipulators", Westinghouse Electric Corp, Jul 10, 1984

LINKS

- Biomimetics and Dexterous Manipulation Lab: http://bdml.stanford.edu

Teaching

COURSES

2025-26

- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310A (Aut)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310B (Win)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310C (Spr)
- Robotics and Autonomous Systems Seminar: ENGR 319 (Aut, Win, Spr)

2024-25

- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310A (Aut)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310B (Win)

- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310C (Spr)
- Robotics and Autonomous Systems Seminar: ENGR 319 (Aut, Win, Spr)

2023-24

- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310A (Aut)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310B (Win)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310C (Spr)
- Robotics and Autonomous Systems Seminar: AA 289, CS 529 (Aut, Win, Spr)

2022-23

- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310A (Aut)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310B (Win)
- Global Engineering Design Thinking, Innovation, and Entrepreneurship: ME 310C (Spr)
- Robotics and Autonomous Systems Seminar: AA 289, CS 529 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Chinmay Devmalya, Adrian Piedra, Fredrik Samdal Solberg, Brian Vuong

Doctoral Dissertation Advisor (AC)

Soy Choi, Seongheon Hong, Venny Kojouharov, Hao Li, XinYi Liang, Annie Mascot, Teo Ren, EmJ Rennich, Stanley Wang

Master's Program Advisor

Mathijs Ammerlaan, Ariel Bachman, Julien Buist-Thuillier, Chiara Cementon, Wesley Guo, Juhyun Jung, Jolene Lee, Delfino Li, Giuse Pham, Rohan Punamiya, Alex Qiu, Isabella Szabo, Bear Tolson, Ivy Ye

Doctoral Dissertation Co-Advisor (AC)

Wesley Guo, Boyeon Kim, Daniel Morton, Adrian Piedra, Baiyu Shi

Doctoral (Program)

Savannah Cofer, Megan Coram, Manaka Gomi, Baiyu Shi

Publications

PUBLICATIONS

- **Locomotion as manipulation with ReachBot.** *Science robotics*
  Chen, T. G., Newdick, S., Di, J., Bosio, C., Ongole, N., Lapôtre, M., Pavone, M., Cutkosky, M. R.
  2024; 9 (89): eadi9762
- **Testing Gecko-Inspired Adhesives with Astrobee Aboard the International Space Station: Readying the Technology for Space** *IEEE ROBOTICS & AUTOMATION MAGAZINE*
  Chen, T. G., Cauligi, A., Suresh, S., Pavone, M., Cutkosky, M.
  2022
- **RVEX: Right Ventricular External Device for Biomimetic Support and Monitoring of the Right Heart** *ADVANCED MATERIALS TECHNOLOGIES*
  Pirozzi, I., Kight, A., Shad, R. A., Han, A., Dual, S. A., Fong, R., Jia, A., Hiesinger, W., Yock, P., Cutkosky, M.
  2022
- **From grasping to manipulation with gecko-inspired adhesives on a multifinger gripper.** *Science robotics*
  Ruotolo, W., Brouwer, D., Cutkosky, M. R.

1800; 6 (61): eabi9773

- **Bird-inspired dynamic grasping and perching in arboreal environments** *SCIENCE ROBOTICS*
  Roderick, W. T., Cutkosky, M. R., Lentink, D.
  2021; 6 (61): eabj7562
- **Creating Metal Molds for Directional Gecko-Inspired Adhesives** *JOURNAL OF MICRO AND NANO-MANUFACTURING*
  Kerst, C., Suresh, S. A., Cutkosky, M. R.
  2020; 8 (1)
- **The Role of Tissue Slip Feedback in Robot-Assisted Surgery** *JOURNAL OF MEDICAL DEVICES-TRANSACTIONS OF THE ASME*
  Burkhard, N. T., Steger, J., Cutkosky, M. R.
  2019; 13 (2)
- **Spatially variant microstructured adhesive with one-way friction.** *Journal of the Royal Society, Interface*
  Suresh, S. A., Kerst, C. F., Cutkosky, M. R., Hawkes, E. W.
  2019; 16 (150): 20180705
- **Forceful manipulation with micro air vehicles** *SCIENCE ROBOTICS*
  Estrada, M. A., Mintchev, S., Christensen, D. L., Cutkosky, M. R., Floreano, D.
  2018; 3 (23)
- **Forceful manipulation with micro air vehicles.** *Science robotics*
  Estrada, M. A., Mintchev, S., Christensen, D. L., Cutkosky, M. R., Floreano, D.
  2018; 3 (23)
- **Active Sensing for Measuring Contact of Thin Film Gecko-Inspired Adhesives** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Tae Myung Huh, Liu, C., Hashizume, J., Chen, T. G., Suresh, S. A., Chang, F., Cutkosky, M. R.
  2018; 3 (4): 3263–70
- **Improving Industrial Grippers With Adhesion-Controlled Friction** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Roberge, J., Ruotolo, W., Duchaine, V., Cutkosky, M.
  2018; 3 (2): 1041–48
- **MR-Compatible Haptic Display of Membrane Puncture in Robot-Assisted Needle Procedures.** *IEEE transactions on haptics*
  Han, A. K., Bae, J. H., Gregoriou, K. C., Ploch, C. J., Goldman, R. E., Glover, G. H., Daniel, B. L., Cutkosky, M. R.
  2018
- **A robotic device using gecko-inspired adhesives can grasp and manipulate large objects in microgravity.** *Science robotics*
  Jiang, H., Hawkes, E. W., Fuller, C., Estrada, M. A., Suresh, S. A., Abcouwer, N., Han, A. K., Wang, S., Ploch, C. J., Parness, A., Cutkosky, M. R.
  2017; 2 (7)
- **A Multimodal Robot for Perching and Climbing on Vertical Outdoor Surfaces** *IEEE TRANSACTIONS ON ROBOTICS*
  Pope, M. T., Kimes, C. W., Jiang, H., Hawkes, E. W., Estrada, M. A., Kerst, C. F., Roderick, W. R., Han, A. K., Christensen, D. L., Cutkosky, M. R.
  2017; 33 (1): 38-48
- **The Ocean One hands: An adaptive design for robust marine manipulation** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
  Stuart, H., Wang, S., Khatib, O., Cutkosky, M. R.
  2017; 36 (2): 150-166
- **Climbing with adhesion: from bioinspiration to biounderstanding** *INTERFACE FOCUS*
  Cutkosky, M. R.
  2015; 5 (4)
- **Surface and Shape Deposition Manufacturing for the Fabrication of a Curved Surface Gripper** *JOURNAL OF MECHANISMS AND ROBOTICS-TRANSACTIONS OF THE ASME*
  Suresh, S. A., Christensen, D. L., Hawkes, E. W., Cutkosky, M.
  2015; 7 (2)
- **A Passive Parallel Master-Slave Mechanism for Magnetic Resonance Imaging-Guided Interventions** *JOURNAL OF MEDICAL DEVICES-TRANSACTIONS OF THE ASME*

Elayaperumal, S., Cutkosky, M. R., Renaud, P., Daniel, B. L.
2015; 9 (1)

- **Design of an Optically Controlled MR-Compatible Active Needle** *IEEE TRANSACTIONS ON ROBOTICS*
  Ryu, S. C., Quek, Z. F., Koh, J., Renaud, P., Black, R. J., Moslehi, B., Daniel, B. L., Cho, K., Cutkosky, M. R.
  2015; 31 (1): 1-11
- **Human climbing with efficiently scaled gecko-inspired dry adhesives** *JOURNAL OF THE ROYAL SOCIETY INTERFACE*
  Hawkes, E. W., Eason, E. V., Christensen, D. L., Cutkosky, M. R.
  2015; 12 (102)
- **Stress distribution and contact area measurements of a gecko toe using a high-resolution tactile sensor.** *Bioinspiration & biomimetics*
  Eason, E. V., Hawkes, E. W., Windheim, M., Christensen, D. L., Libby, T., Cutkosky, M. R.
  2015; 10 (1): 016013-?
- **Stress distribution and contact area measurements of a gecko toe using a high-resolution tactile sensor.** *Bioinspiration & biomimetics*
  Eason, E. V., Hawkes, E. W., Windheim, M., Christensen, D. L., Libby, T., Cutkosky, M. R.
  2015; 10 (1): 016013-?
- **An analytic framework for developing inherently-manufacturable pop-up laminate devices** *SMART MATERIALS AND STRUCTURES*
  Aukes, D. M., Goldberg, B., Cutkosky, M. R., Wood, R. J.
  2014; 23 (9)
- **Dynamic tactile sensing** *in The Human Hand: A Source of Inspiration for Robotic Hands*
  Cutkosky, M., R., Ulmen, J.
  edited by Balasubrmanian, R., Santos, V.
  Berlin, Heidelberg: Springer Verlag, in press..2014: 1
- **The Gecko's Toe: Scaling Directional Adhesives for Climbing Applications** *IEEE-ASME TRANSACTIONS ON MECHATRONICS*
  Hawkes, E. W., Eason, E. V., Asbeck, A. T., Cutkosky, M. R.
  2013; 18 (2): 518-526
- **Biomimetic Robotic Mechanisms via Shape Deposition Manufacturing** *Robotics Research: the Ninth International Symposium*
  Bailey, S., A., Cham, J., G., Cutkosky, M., R., Full, R., J.
  edited by Hollerbach, J., Koditschek, D.
  Springer-Verlag.: 403–410
- **Gentle Object Retraction in Dense Clutter Using Multimodal Force Sensing and Imitation Learning** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Brouwer, D., Citron, J., Nolte, H., Bohg, J., Cutkosky, M.
  2026; 11 (2): 1578-1585
- **SLIM: A Symmetric, Low-Inertia Manipulator for Constrained, Contact-Rich Spaces** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Thomasson, R., Bernardini, A., Li, H., Xing, C., Hajj-Ahmad, A., Cutkosky, M.
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- **Whisker-Inspired Tactile Sensing: A Sim2Real Approach for Precise Underwater Contact Tracking** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Li, H., Xing, C., Khan, S., Zhong, M., Cutkosky, M. R.
  2025; 10 (6): 6087-6094
- **Simulation-Guided, Application-Specific Manufacturing of Gecko-Inspired Adhesives** *JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME*
  Hajj-Ahmad, A., Gharibi, A., Lanzetta, M., Cutkosky, M. R.
  2025; 147 (6)
- **DexForce: Extracting Force-Informed Actions From Kinesthetic Demonstrations for Dexterous Manipulation** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Chen, C., Yu, Z., Choi, H., Cutkosky, M., Bohg, J.
  2025; 10 (6): 6416-6423

- **VITALS: an implantable sensor network for postoperative cardiac monitoring in heart failure patients.** *npj biomedical innovations*
  Kight, A., Haidar, M., Shibata, M., Ono, Y., Ikeda, G., Sharir, A., Semproni, F., Palagani, Y., Taheri, S., Han, A. K., Ma, M., Riemer, K., McElhinney, et al
  2025; 2 (1)
- **Using Fiber Optic Bundles to Miniaturize Vision-Based Tactile Sensors** *IEEE TRANSACTIONS ON ROBOTICS*
  Di, J., Dugonjic, Z., Fu, W., Wu, T., Mercado, R., Sawyer, K., Most, V., Kammerer, G., Speidel, S., Fan, R. E., Sonn, G., Cutkosky, M. R., Lambeta, et al
  2025; 41: 62-81
- **TypeTele: Releasing Dexterity in Teleoperation by Dexterous Manipulation Types**
  Lin, Y., Wei, Y., Liao, H., Lin, M., Xing, C., Li, H., Zhang, D., Cutkosky, M., Zheng, W.
  edited by Lim, J., Song, S., Park, H. W.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 4975-4993
- **Fourigami: A 4-Degree-of-Freedom, Force-Controlled, Origami, Finger Pad Haptic Device** *IEEE TRANSACTIONS ON ROBOTICS*
  Winston, C. E., Choi, H., Jitosho, R., Zhakypov, Z., Palmer, J. E., Cutkosky, M. R., Okamura, A. M.
  2025; 41: 4829-4842
- **VITALS: an implantable sensor network for postoperative cardiac monitoring in heart failure patients** *npj Biomedical Innovations*
  Kight, A., Haidar, M., Shibata, M., Ono, Y., Ikeda, G., Sharir, A., Semproni, F., Palagani, Y., Taheri, S., Han, A., Ma, M., Riemer, K., McElhinney, et al
  2025; 2 (15)
- **Tactile-Reactive Roller Grasper** *IEEE TRANSACTIONS ON ROBOTICS*
  Yuan, S., Wang, S., Patel, R., Tippur, M., Yako, C. L., Cutkosky, M. R., Adelson, E., Salisbury, J.
  2025; 41: 1938-1955
- **Additively manufactured micro-lattice dielectrics for multiaxial capacitive sensors.** *Science advances*
  Berman, A., Hsiao, K., Root, S. E., Choi, H., Ilyn, D., Xu, C., Stein, E., Cutkosky, M., DeSimone, J. M., Bao, Z.
  2024; 10 (40): eadq8866
- **Martian Exploration of Lava Tubes (MELT) with ReachBot: Scientific Investigation and Concept of Operations**
  Dil, J., Cuevas-Quinones, S., Newdick, S., Chen, T. G., Pavone, M., Lapotre, M. G. A., Cutkosky, M., IEEE
  IEEE.2024: 36-41
- **Task-Driven Manipulation with Reconfigurable Parallel Robots**
  Morton, D., Cutkosky, M., Pavone, M., IEEE
  IEEE.2024: 9924-9930
- **Tactile-Informed Action Primitives Mitigate Jamming in Dense Clutter**
  Brouwer, D., Citron, J., Choi, H., Lepert, M., Lin, M., Bohg, J., Cutkosky, M., IEEE
  IEEE.2024: 7991-7997
- **Angle-selective thermal emitter for directional radiative cooling and heating** *JOULE*
  Zhou, J., Chen, T. G., Tsurimaki, Y., Hajj-Ahmad, A., Fan, L., Peng, Y., Xu, R., Wu, Y., Assawaworrarit, S., Fan, S., Cutkosky, M. R., Cui, Y.
  2023; 7 (12)
- **Integrated Pneumatic Sensing and Actuation for Soft Haptic Devices** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Choi, H., Cutkosky, M. R., Stanley, A. A.
  2023; 8 (11): 7591-7598
- **GRASP: Grocery Robot's Adhesion and Suction Picker** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Hajj-Ahmad, A., Kaul, L., Matl, C., Cutkosky, M.
  2023; 8 (10): 6419-6426
- **An Electrostatically Actuated Gecko Adhesive Clutch** *ADVANCED MATERIALS TECHNOLOGIES*
  Hajj-Ahmad, A., Han, A., Lin, M. A., Glover, G. H., Cutkosky, M. R.
  2023
- **Circulatory Support: Artificial Muscles for the Future of Cardiovascular Assist Devices.** *Advanced materials (Deerfield Beach, Fla.)*

Pirozzi, I., Kight, A., Han, A. K., Cutkosky, M. R., Dual, S. A.
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- **Decoupling Transmission and Transduction for Improved Durability of Highly Stretchable, Soft Strain Sensing: Applications in Human Health Monitoring.** *Sensors (Basel, Switzerland)*
  Kight, A., Pirozzi, I., Liang, X., McElhinney, D. B., Han, A. K., Dual, S. A., Cutkosky, M.
  2023; 23 (4)
- **Bird-inspired robotics principles as a framework for developing smart aerospace materials** *JOURNAL OF COMPOSITE MATERIALS*
  Hoffmann, K. A. W., Chen, T. G., Cutkosky, M. R., Lentink, D.
  2023
- **Designing ReachBot: System Design Process with a Case Study of a Martian Lava Tube Mission**
  Newdick, S., Chen, T. G., Hockman, B., Schmerling, E., Cutkosky, M. R., Pavone, M., IEEE
  IEEE.2023
- **Motion Planning for a Climbing Robot with Stochastic Grasps**
  Newdick, S., Ongole, N., Chen, T. G., Schmerling, E., Cutkosky, M. R., Pavone, M., IEEE
  IEEE.2023: 11838-11844
- **Design of Active Sensing Smart Skin for Incipient Slip Detection in Robotics Applications** *IEEE-ASME TRANSACTIONS ON MECHATRONICS*
  Liu, C., Huh, T., Chen, S. X., Lu, L., Kopsaftopoulos, F., Cutkosky, M. R., Chang, F.
  2022
- **UV-laser-machined stretchable multi-modal sensor network for soft robot interaction** *NPJ FLEXIBLE ELECTRONICS*
  Ham, J., Han, A., Cutkosky, M. R., Bao, Z.
  2022; 6 (1)
- **Electrohydraulic Vascular Compression Device (e-VaC) with Integrated Sensing and Controls** *ADVANCED MATERIALS TECHNOLOGIES*
  Pirozzi, I., Kight, A., Liang, X., Han, A., Ennis, D. B., Hiesinger, W., Dual, S. A., Cutkosky, M. R.
  2022
- **Porous Dielectric Elastomer Based Flexible Multiaxial Tactile Sensor for Dexterous Robotic or Prosthetic Hands** *ADVANCED MATERIALS TECHNOLOGIES*
  Ham, J., Huh, T., Kim, J., Kim, J., Park, S., Cutkosky, M. R., Bao, Z.
  2022
- **Aerial Grasping and the Velocity Sufficiency Region** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Chen, T. G., Hoffmann, K. A. W., Low, J., Nagami, K., Lentink, D., Cutkosky, M. R.
  2022; 7 (4): 10009-10016
- **DynaRing: A Patient-Specific Mitral Annuloplasty Ring With Selective Stiffness Segments.** *Journal of medical devices*
  Frishman, S., Kight, A., Pirozzi, I., Maddineni, S., Imbrie-Moore, A. M., Karachiwalla, Z., Paulsen, M. J., Kaiser, A. D., Woo, Y. J., Cutkosky, M. R.
  2022; 16 (3): 031009
- **Perceived Intensities of Normal and Shear Skin Stimuli Using a Wearable Haptic Bracelet** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Sarac, M., Huh, T., Choi, H., Cutkosky, M. R., Di Luca, M., Okamura, A. M.
  2022; 7 (3): 6099-6106
- **Bimanual Handling of Deformable Objects With Hybrid Adhesion** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Han, A., Hajj-Ahmad, A., Cutkosky, M. R.
  2022; 7 (2): 5497-5503
- **Whisker-Inspired Tactile Sensing for Contact Localization on Robot Manipulators**
  Lin, M. A., Reyes, E., Bohg, J., Cutkosky, M. R., IEEE
  IEEE.2022: 7817-7824
- **ReachBot: A Small Robot with Exceptional Reach for Rough Terrain**
  Chen, T. G., Miller, B., Winston, C., Schneider, S., Bylard, A., Pavone, M., Cutkosky, M. R., IEEE
  IEEE.2022: 4517-4523

- **Going In Blind: Object Motion Classification using Distributed Tactile Sensing for Safe Reaching in Clutter**
  Thomasson, R., Roberge, E., Cutkosky, M. R., Roberge, J., IEEE
  IEEE.2022: 1440-1446
- **Deep Learning Classification of Touch Gestures Using Distributed Normal and Shear Force**
  Choi, H., Brouwer, D., Lin, M. A., Yoshida, K. T., Rognon, C., Stephens-Fripp, B., Okamura, A. M., Cutkosky, M. R., IEEE
  IEEE.2022: 3659-3665
- **Exploratory Hand: Leveraging Safe Contact to Facilitate Manipulation in Cluttered Spaces** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Lin, M. A., Thomasson, R., Uribe, G., Choi, H., Cutkosky, M.
  2021; 6 (3): 5159-5166
- **A Stretchable Tactile Sleeve for Reaching Into Cluttered Spaces** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Gruebele, A. M., Lin, M. A., Brouwer, D., Yuan, S., Zerbe, A. C., Cutkosky, M. R.
  2021; 6 (3): 5308-5315
- **Compression Molding and Nickel Molds for Directional Gecko-Inspired Adhesives** *JOURNAL OF MICRO AND NANO-MANUFACTURING*
  Kerst, C. F., Cutkosky, M. R.
  2021; 9 (2)
- **Cutting to the Point: Directly Machined Metal Molds for Directional Gecko-Inspired Adhesives** *JOURNAL OF MICRO AND NANO-MANUFACTURING*
  Hajj-Ahmad, A., Suresh, S. A., Cutkosky, M.
  2021; 9 (2)
- **Hybrid electrostatic and gecko-inspired gripping pads for manipulating bulky, non-smooth items** *SMART MATERIALS AND STRUCTURES*
  Han, A., Hajj-Ahmad, A., Cutkosky, M. R.
  2021; 30 (2)
- **Forcing the issue: testing gecko-inspired adhesives.** *Journal of the Royal Society, Interface*
  Suresh, S. A., Hajj-Ahmad, A., Hawkes, E. W., Cutkosky, M. R.
  2021; 18 (174): 20200730
- **A Multi-Axis FBG-Based Tactile Sensor for Gripping in Space**
  Frishman, S., Di, J., Karachiwalla, Z., Black, R. J., Moslehi, K., Smith, T., Coltin, B., Moslehi, B., Cutkosky, M. R., IEEE
  IEEE.2021: 1794-1799
- **PEDOT:PSS Coating Improves Gecko-Inspired Adhesive Performance** *JOURNAL OF MICRO AND NANO-MANUFACTURING*
  Kerst, C., Suresh, S. A., Ferro, M., Cutkosky, M.
  2020; 8 (3)
- **Haptic Surface Display based on Miniature Dielectric Fluid Transducers** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Han, A., Ji, S., Wang, D., Cutkosky, M. R.
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