

# LILLIAN CHIN

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## ACADEMIC POSITIONS

<b>University of Texas, Austin (UT Austin)</b> <i>Assistant Professor of Electrical and Computer Engineering</i>	<b>2024 - present</b> <i>Austin, TX</i>
<b>National Institutes of Health (NIH)</b> <i>Postdoctoral Fellow, Advisors: Leonardo Cohen, Tom Bulea</i>	<b>2023 - 2024</b> <i>Bethesda, MD</i>

## EDUCATION

<b>Massachusetts Institute of Technology (MIT)</b> <i>PhD in Electrical Engineering and Computer Science, Advisor: Daniela Rus</i> <i>Thesis: “<a href="#">Function Follows Form: An Exploration of Robotic Embodiment through Geometry</a>”</i>	<b>2017 - 2023</b> <i>Cambridge, MA</i> <i>GPA: 4.8/5.0</i>
<b>Massachusetts Institute of Technology (MIT)</b> <i>S.M. in Electrical Engineering and Computer Science, Advisor: Daniela Rus</i> <i>Thesis: “<a href="#">A High-Deformation Electric Soft Robotic Gripper via Handed Shearing Auxetics</a>”</i>	<b>2017 - 2019</b> <i>Cambridge, MA</i> <i>GPA: 4.8/5.0</i>
<b>Massachusetts Institute of Technology (MIT)</b> <i>S.B. in Electrical Engineering and Computer Science</i> <i>Minors in Mechanical Engineering, Comparative Media Studies</i>	<b>2013 - 2017</b> <i>Cambridge, MA</i> <i>GPA: 4.9/5.0</i>

## GRANTS

### Funded

<b>Texas Robotics Industrial Affiliates Program, Seed Grant</b> “Dexterous Manipulation via Robot Learning Algorithms on Sensorized Grippers” PI with Co-PI Roberto Martín-Martín, UT Austin	<b>2024 - 2025</b> \$50,000
<b>Texas Robotics Industrial Affiliates Program, Seed Grant</b> “Optimization of Soft Robotic Feet for Quadruped Locomotion” PI with Co-PI David Fridovich-Keil, UT Austin	<b>2024 - 2025</b> \$25,000

### Under Review

<b>NIH NIBIB, R21 Trailblazer</b> “Customizable Add-On Pressure Sensors to Quantify the Interaction Between Human and Medical Device” Sole PI	<b>Submitted 2024</b> \$598,643
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## HONORS AND AWARDS

### Research Awards

Outstanding Reviewer, Distinguished Service Award – <a href="#">IEEE Robotics and Automation Magazine</a>	<b>2024</b>
Winner (\$5,000) (2 selected, institution) – <a href="#">Dimitris N. Chorafas Award</a>	<b>2023</b>
Winning Team (\$100,000) – <a href="#">Norman B. Leventhal City Prize</a>	<b>2022</b>
Nominated, Best Paper [J.5] – <a href="#">IEEE Robosoft Conference</a>	<b>2021</b>
First Place (\$1,000) – <a href="#">MIT Research Slam</a>	<b>2020</b>
Best Poster Award [C.3] – <a href="#">IEEE Robosoft Conference</a>	<b>2019</b>
First Place, Student Paper Competition [W.3] – <a href="#">ACM Symposium on CS &amp; Law</a>	<b>2019</b>
Finalist (40 selected, nationally) – <a href="#">Intel Science Talent Search</a>	<b>2013</b>

### Fellowships

Fellow (32 selected, internationally) – <a href="#">Schmidt Science Fellows</a>	<b>2023 – 2024</b>
Fellow (10 selected, nationally) – <a href="#">Hertz Foundation Graduate Fellowship</a>	<b>2018 – 2023</b>
Scholar (55 selected, institution) – <a href="#">MIT Social and Ethical Responsibilities of Computing (SERC) Scholar</a>	<b>2021 – 2023</b>
Fellow (2,000 selected, nationally) – <a href="#">National Science Foundation Graduate Research Fellowship</a>	<b>2018 – 2021</b>
Fellow (40 selected, nationally among first-gen immigrants) – <a href="#">Paul &amp; Daisy Soros Fell. for New Americans</a>	<b>2018 – 2020</b>
Fellow (25 selected, institution) – <a href="#">MIT Energy Initiative Graduate Fellowship</a>	<b>2018</b>
Fellow (75 selected, nationally) – <a href="#">Kleiner Perkins Caulfield Byers (KPCB) Engineering Fellow</a>	<b>2014</b>

## Personal Awards

Participant (85 selected, internationally among EECS academics w. underrepresented genders) – <a href="#">EECS Rising Stars</a>	<b>2022</b>
Participant (70 selected, nationally among underrepresented engineering academics) – <a href="#">NextProf Nexus</a>	<b>2022</b>
Participant (30 selected, internationally among robotics researchers) – <a href="#">Robotics, Science &amp; Systems (RSS) Pioneers</a>	<b>2022</b>
First Place (\$10) – <a href="#">Topsfield County Fair, Crafts Department, Original Needlework</a>	<b>2022</b>
Member (75 selected, institution) – <a href="#">Phi Beta Kappa Honors Society, Xi Chapter</a>	<b>2017</b>
First Place (\$100,000) – <a href="#">Jeopardy College Championship Winner</a>	<b>2017</b>

## PUBLICATIONS

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### Peer-Reviewed Journal Articles

- [J.11] Xie, G., Holladay, R.\*, **Chin, L.\***, & Rus, D. “[In-Hand Manipulation with a Simple Belted Parallel-Jaw Gripper.](#)” *IEEE Robotics and Automation Letters* 9(2), 1334-1341. (2024)  
Presented at ICRA@40 in 2024.
- [J.10] **Chin, L.**, Burns, M.\*, Xie, G.\*, & Rus, D. “[Flipper-Style Locomotion through Strong Expanding Modular Robots.](#)” *IEEE Robotics and Automation Letters*. 8(2), 528-535. (2022)  
Presented at ICRA 2023.
- [J.9] Truby, R.\*, **Chin, L.\***, Zhang, A., & Rus, D. “[Fluidic Innervation Sensorizes Structures from a Single Build Material.](#)” *Science Advances*. 8(31). (2022)
- [J.8] Zhang, A., Truby, R., **Chin, L.**, Li, S., & Rus, D. “[Vision-Based Sensing for Electrically-Driven Soft Actuators.](#)” *IEEE Robotics and Automation Letters*. 7(4): 11509-11516. (2022)  
Presented at IROS 2022.
- [J.7] Araki, B., Choi, J., **Chin, L.**, Li, X., & Rus, D. “[Learning Policies by Learning Rules.](#)” *IEEE Robotics and Automation Letters*. 7(2): 1284-1291. (2021)
- [J.6] **Chin, L.** “[How to Survive a Public Faming: Understanding ‘The Spiciest Memelord’ via the Temporal Dynamics of Involuntary Celebrification.](#)” *First Monday*. 26(4). (2021)
- [J.5] Spielberg, A.\*, Amini, A.\*, **Chin, L.**, Matusik, W., & Rus, D. “[Co-Learning of Task and Sensor Placement for Soft Robotics.](#)” *IEEE Robotics and Automation Letters*. 6(2): 1208-1215. (2021)  
**Nominated, Best Paper Award** at Robosoft 2021.
- [J.4] Truby, R.\*, **Chin, L.\***, & Rus, D. “[A Recipe for Electrically-Driven Soft Robots via 3D Printed Handed Shearing Auxetics.](#)” *IEEE Robotics and Automation Letters*. 6(2): 795-802. (2021)  
Presented at Robosoft 2021.
- [J.3] Lipton, J., MacCurdy, R., Manchester, Z., **Chin, L.**, Celluci, D., & Rus, D. “[Handedness in Shearing Auxetics Creates Rigid and Compliant Structures.](#)” *Science*. 360(6389): 632-635. (2018)
- [J.2] Stevens, A., Oliver, R., Kirchmeyer, M., Wu, J., **Chin, L.**, Polsen E., Archer, C., Boyle, C., Garber, J., & Hart, J. “[Conformal robotic stereolithography.](#)” *3D Printing and Additive Manufacturing*, 3(4): 226-235. (2016)
- [J.1] Harrow, C. & **Chin, L.** “[Technology-Enhanced Discovery.](#)” *Mathematics Teacher*, **107**: 660 – 665. (2014)

### Peer-Reviewed Conference Papers

- [C.12] **Chin, L.**, Xie, G., Lipton J., & Rus, D. “[Large-Expansion Bi-Layer Auxetics Create Compliant Cellular Motion.](#)” Manuscript under review at ICRA 2025.
- [C.11] Xie, G., **Chin, L.**, Kim, B., Holladay, R., & Rus, D. “[Strong Compliant Grasps Using a Cable-Driven Soft Gripper.](#)” In *Intelligent Robots and Systems (IROS), 2024 IEEE International Conference on*. IEEE. (2024).
- [C.10] Zhang, A.\*, **Chin, L.\***, Tong, D.L., & Rus, D. “[Embedded Air Channels Transform Soft Lattices into Sensorized Grippers.](#)” In *Robotics and Automation (ICRA), 2024 IEEE International Conference on*. IEEE. (2024).
- [C.9] Chen, V.\*, **Chin, L.\***, Choi, J.\*, Zhang, A.\*, & Rus, D. “[Real-Time Grocery Packing by Integrating Vision, Tactile Sensing, and Soft Fingers.](#)” In *Soft Robotics (Robosoft), 2024 IEEE International Conference on*. IEEE. (2024).

- [C.8] Zhang, A.\*, Wang, T.-H.\*, Truby, R., **Chin, L.**, & Rus, D. “[Machine Learning Best Practices for Soft Robot Proprioception.](#)” In *Intelligent Robots and Systems (IROS), 2023 IEEE International Conference on.* IEEE. (2023).
- [C.7] Stölzle, M., **Chin, L.**, Truby, R., Rus, D., & Della Santina, C. “[Modelling Handed Shearing Auxetics: Selective Piecewise Constant Strain Kinematics and Dynamic Simulation.](#)” In *Soft Robotics (RoboSoft), 2023 IEEE International Conference on.* IEEE. (2023).
- [C.6] **Chin, L.**, Barscevicius, F., Lipton, J., & Rus, D. “[Multiplexed Manipulation: Versatile Multimodal Grasping via a Hybrid Soft Gripper.](#)” In *Robotics and Automation (ICRA), 2020 IEEE International Conference on.* IEEE. (2020).
- [C.5] Lipton, J., **Chin, L.**, Miske, J., & Rus, D. “[Modular Volumetric Actuators Using Motorized Auxetics.](#)” In *Intelligent Robots and Systems (IROS), 2019 IEEE International Conference on.* IEEE. (2019).
- [C.4] **Chin, L.**, Yuen, M.C., Lipton, J., Trueba, L.H., Kramer-Bottiglio, R., & Rus, D. “[A Simple Electric Soft Robotic Gripper with High-Deformation Haptic Feedback.](#)” In *Robotics and Automation (ICRA), 2019 IEEE International Conference on.* IEEE. (2019).
- [C.3] **Chin, L.**, Lipton, J., Yuen, M.C., Kramer-Bottiglio, R., & Rus, D. “[Automated Recycling Separation Enabled by Soft Robotic Material Classification.](#)” In *Soft Robotics (RoboSoft), 2019 IEEE International Conference on.* IEEE. (2019). **Winner, Best Poster Award**
- [C.2] **Chin, L.**, Lipton, J., MacCurdy, R., Romanishin, J., Sharma, C., & Rus, D. “[Compliant Electric Actuators Based on Handed Shearing Auxetics.](#)” In *Soft Robotics (RoboSoft), 2018 IEEE International Conference on.* IEEE. (2018).
- [C.1] Beaudoin J., **Chin L.**, Zlotnick H., Cervantes T., Lassey S., Robinson J., & Slocum A. “[Obstetrical Forceps with Passive Rotation and Sensor Feedback.](#)” ASME. *Frontiers in Biomedical Devices, 2018 Design of Medical Devices Conference.* (2018).

## Books and Book Chapters

- [B.1] Sandoval Olascoaga, C., **Chin, L.**, Correa Menendez, J., Kovacs, R., Zhong, C., & de Monchaux, N. “[Drawing Together: Technology Development for Public Service.](#)” In *Improving Technology Through Ethics* (pp. 65-82). Cham: Springer Nature Switzerland. (2024).

## Patents

- [P.2] Rus, D., Lipton, J., & **Chin, L.** “[Vibration absorber for power tools](#)”, US11,583,972, issued on Feb. 21, 2023.
- [P.1] Lipton, J., MacCurdy, R., **Chin, L.**, & Rus, D. “[Non-planar shearing auxetic structures, devices, and methods](#)”, US10,850,406, issued on Dec. 1, 2020.

## Workshop and Symposium Contributions

- [W.3] **Chin, L.** “Focusing the Legal Lens on Data: Examining Metaphors of Personal Data and their Legal Implications ” Paper and poster in [2019 ACM Inaugural Symposium on Computer Science and Law](#)  
**First Prize, Student Paper Competition**
- [W.2] **Chin, L.** “Design and fabrication of dual-flipping mechanisms.” Abstract and poster in 2019 International Conference on Robotics and Automation workshop: [Robot Design and Customization: Opportunities at the Intersection of Computation and Digital Fabrication](#)
- [W.1] **Chin, L.**, Lipton, J., MacCurdy, R., Romanishin, J., Sharma, C., & Rus, D. “Compliant Electric Actuators Based on Handed Shearing Auxetics.” Poster in [2018 New England Manipulation Symposium](#)

## Invited Speaker

<i>Talk: “Materials Make the Bot: Directly Embedding Actuation and Perception into Robotic Structures”</i>	
UPenn, GRASP Lab Seminar	<b>Jun. 2024</b>
Columbia University, Wolpert Lab Talk	<b>Jun. 2023</b>
Queen’s University at Kingston, Centre for Neuroscience Studies Talk	<b>Jun. 2023</b>
UC Berkeley, Mechanical Engineering Seminar	<b>Mar. 2023</b>
UT Austin, Electrical and Computer Engineering Seminar	<b>Mar. 2023</b>

Oregon State, Mechanical Engineering Seminar	Feb. 2023
Carnegie Mellon, Softbotics Seminar	Nov. 2022
Georgia Tech, Mechanical Engineering Seminar	Oct. 2022
MIT, EECS Dept., Academic Job Search Seminar – Panelist	May, Oct. 2024
UMD, College Park, CS Dept., Class on Natural Language Processing – “Final Project Showcase”	May 2024
UMass Boston, Dept. of Psychology, Class on Research Methods – “Repeated Measures”	Jun. 2023
Hertz Summer Workshop – “Sensorizing Architected Materials with Fluidic Networks”	Jul. 2022
CUNY Queens College, Media Studies Colloquium – “How To Survive a Public Faming”	Nov. 2021
Hertz Fall Retreat – Panel Leader, “Robotics”	Sep. 2020
University of Copenhagen SURF@DAWN – “Embodied Intelligence”	Jul. 2020
Consumer Electronics Expo – Panelist, “Robots Save the Land”	Jan. 2020
Hertz East Coast Retreat – Panelist, “Science and Media”	Sep. 2018
Designed Education – Speaker, “Introduction to Robotics”	Jul. 2018

## RESEARCH STUDENTS SUPERVISED

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### PhD Students

#### UT Austin

David Bershadsky [ <a href="#">NSF GRFP recipient</a> ] – <i>Multimaterial 3D printing of soft-rigid hybrids</i>	2024 – present
Siqi Shang – <i>sim2real transfer of tactile data for manipulation</i>	2024 – present
Tuo Wang – <i>Dynamic soft shape-morphing fingers</i>	2024 – present
Gu-Cheol Jeong (collaborator) – <i>Flexible wrist for manipulation</i>	2024 – present
Chongxun Wang (collaborator) – <i>Sensorized medical phantoms for capsule robots</i>	2024 – present

### Masters Students

#### MIT

Gregory Xie [ <a href="#">J.10</a> , <a href="#">J.11</a> , <a href="#">C.11</a> , <a href="#">C.12</a> , <a href="#">thesis</a> ] – <i>Design of sensorized soft gripper and belt-driven gripper</i>	2022 – 2023
Jeana Choi [ <a href="#">J.7</a> , <a href="#">C.9</a> , <a href="#">thesis</a> ] – <i>System integration of grocery packing robot</i>	2020 – 2022

### Undergraduate Students

#### UT Austin

Darren Au – <i>Design of sensorized grippers</i>	2024 – present
Tanya Lertpradist – <i>Exploration of acoustic tactile sensors and design of multiplexed manipulator</i>	2024 – present
Hrishikesh Sahu – <i>Electronics design of wearable sensorized pads</i>	2024 – present
Ava Chao Schraeder – <i>Mechanical design of wearable sensorized pads</i>	2024 – present
Avery Atchley (Plan II Honors Program, Thesis Reader) – <i>Hearing aid design for youths playing sports</i>	2024 – present

#### MIT

Juliana Covarrubias – <i>Mechanical design of dual-flipping robots</i>	2022 – 2023
Shruti Garg – <i>System integration of sensorized fingers and design of tactile sensors</i>	2022 – 2023
Katherine Pan – <i>Mathematical exploration of dual-flipping robots</i>	2022 – 2023
Grey Saramiento – <i>Algorithmic lattice generation and routing of fluidic sensors</i>	2022 – 2023
Daniel Tong [ <a href="#">C.10</a> ] – <i>Exploration of resin chemistry and metamaterial design through nTopology</i>	2022 – 2023
Max Burns [ <a href="#">J.10</a> ] – <i>Application exploration of modular volumetric robots</i>	2022
Nine Morch – <i>Design testing rigs for metamaterials; mechanical design of dual-flipping robots</i>	2022
Ahmed Diongue – <i>Mechanical characterization of metamaterials</i>	2022
Valerie Chen [ <a href="#">C.9</a> ] – <i>Computer vision algorithms for bin packing; tactile sensor design</i>	2019 – 2022
Gregory Xie [ <a href="#">J.10</a> ] – <i>System design of modular volumetric robots</i>	2019 – 2021
Joaquin Giraldo-Laguna – <i>Fabrication and simulation of modular volumetric robots</i>	2020
Sofia Leon – <i>Mechanical design of dual-flipping robots</i>	2019 – 2020
Hannah Adams – <i>Mechanical characterization of metamaterials</i>	2019
Felipe Barscevicus [ <a href="#">C.6</a> ] – <i>Mechanical design of multiplexed manipulator</i>	2019
Andromeda Teevens – <i>Exploration of machine learning segmentation algorithms</i>	2019
Sabina Tontici – <i>Mechanical design of soft robotic gripper</i>	2019
Chetan Sharma [ <a href="#">C.2</a> ] – <i>Mechanical design of soft robotic gripper covering</i>	2017 – 2019
Shiloh Curtis – <i>Exploration of computer vision segmentation algorithms</i>	2018 – 2019
Jacob Miske [ <a href="#">C.5</a> ] – <i>System design of modular volumetric robots</i>	2018 – 2019
Jonathan Tagoe – <i>Design testing rigs for metamaterial characterization</i>	2018 – 2019

Antares McCoy-Villaneda – <i>Design testing rigs for metamaterial characterization</i>	2018
Luis Trueba [C.4] – <i>Grasping tests and mechanical design of grocery packing testbed</i>	2018

## TEACHING EXPERIENCE

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### Academic

Teaching Assistant, MIT CMS.701 – Current Debates in Media	2020
Teaching Assistant, MIT 6.146 – Mobile Autonomous Systems Laboratory	2018
Head Lab Assistant, MIT 6.002 – Circuits and Electronics	2015 – 2017
Lab Assistant, MIT 6.004 – Computation Structures	2016

### Pedagogical Training

MIT Kaufman Teaching Certificate Program	2022
MIT EECS UROP (Undergraduate Research Opportunities Program) Mentorship Initiative	2022

### Extracurricular

Tutor, ESL Program for MIT Facilities Department Employees	2019 – 2020, 2022 – 2023
Mentor and Library Machine Master, MIT MakerWorkshop	2017 – 2020
Teacher, MIT Educational Studies Program	2013 – 2019
Tutor, InstaEDU / Chegg Tutors	2014 – 2017

## SERVICE AND OUTREACH

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### Service to the University

Faculty Mentor (Comms / Data Science), UT Austin Electrical and Computer Engineering Department	2024 – present
Faculty Co-Advisor, IEEE RAS (Robotics and Automation Society), UT Austin Chapter	2024 – present

### Service to the Profession

#### Conference and Society Service

Associate Co-Chair, IEEE RAS Technical Committee on Mechanisms and Design	2023 – present
Program Committee Chair, RSS (Robotics: Science and Systems) Pioneers	2023
Local Arrangements Chair, ACM Symposium on Computational Fabrication	2018

#### External Paper Reviewer

IEEE International Conference on Soft Robotics (Robosoft)	2018 – 2021, 2023 – 2025
IEEE Robotics and Automation Magazine (RA-M)	2023 – 2024
IEEE Robotics and Automation Letters (RA-L)	2019 – 2024
IEEE International Conference on Robotics and Automation (ICRA)	2019 – 2020, 2022 – 2024
First Monday	2020 – 2021, 2023
IEEE International Conference on Intelligent Robots and Systems (IROS)	2019, 2021, 2022
IEEE International Conference on Automation Science and Engineering (CASE)	2021
International Journal of Robotics Research (IJRR)	2019

### Service to the Community

#### Mentorship

Project SHORT (Students for Higher Education Opportunities and Representation in Training)	2021 – 2023
MIT EECS Graduate Application Assistance Program	2020
Cientifico Latino Graduate Student Mentorship Initiative	2018 – 2020
MIT Society of Women Engineers Alumni Mentorship Program	2018 – 2020
MIT Office of Minority Education, Laureates and Leaders Program	2018 – 2020
MIT Women in Electrical Engineering and Computer Science Student Mentorship Program	2018 – 2020
Girls Who Code Mentorship Program	2015
MIT Society of Women Engineers, Women in Science and Engineering High School Mentorship Program	2014

#### Outreach

Judge, UT Austin IEEE RAS Robotathon	Nov. 2024
Judge, MIT Halloween Game Jam	Oct. 2018
Invited Speaker, MIT INSPIRE Competition	May 2017
Invited Speaker, Georgia FIRST Robotics: Peachtree Regional	Mar. 2017