

Albert Hao Li

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EDUCATION	Stanford University 09/19 - 06/21 (expected) M.S. Mechanical Engineering GPA: 4.150 / 4.000 University of California, Berkeley 08/15 - 05/19 B.S. Mechanical Engineering Minor in Electrical Engineering and Computer Science GPA: 3.928 / 4.000 (High Honors)
RESEARCH EXPERIENCE	Assistive Robotics and Manipulation Lab 10/19 - Present PI: Monroe Kennedy III Stanford University Currently researching safe dynamical learning, prediction, and control for robots and human-robot interactions. Hybrid Robotics Lab 05/19 - 10/19 PI: Koushil Sreenath UC Berkeley Developed real-time control algorithms for simultaneous ball juggling and balancing on the bipedal robot Cassie. Berkeley Emergent Space Tensegrities Lab 09/18 - 10/19 PI: Alice Agogino UC Berkeley Derived new models and shape control algorithms for compound tensegrity robots, applied results to design of spinally-actuated tensegrity locomotors. Laboratory for Automation Science and Engineering 02/17 - 12/17 PI: Ken Goldberg UC Berkeley Researched weight, cost, and strength optimization for the mechanical design of robotic manipulators using rapid prototyping methods.
PROFESSIONAL EXPERIENCE	Apple Inc. 01/18 - 08/18 Apple Watch Product Design Intern Designed parts for the Apple Watch Series 4 and 5, researched tactile sensing technologies, and conducted experiments on dynamic human interaction and product usage behaviors.
PUBLICATIONS	<i>For article access and supplemental materials, visit alberthli.github.io.</i> Journal Publications J1. Andrew Preston Sabelhaus, Albert Hao Li , Kimberley Sover, Jacob Madden, Andrew Barkan, Adrian Agogino, and Alice Agogino, "Inverse Statics Optimization for Compound Tensegrity Robots," <i>IEEE Robotics and Automation Letters</i> , vol. 5, no. 3, pp. 3982-3989, 2020.

Conference Publications

- C2. Katherine Lin Poggensee*, **Albert Hao Li***, Daniel Sotsaichich*, Bike Zhang, Prasanth Kotaru, Mark Mueller, and Koushil Sreenath, “Ball Juggling on the Bipedal Robot Cassie,” *2020 European Control Conference (ECC)*, Saint Petersburg, Russia, 2020, pp. 875-880. ***Equal Contribution.**
- C1. Jeffrey Mahler, Matthew Matl, Xinyu Liu, **Albert Li**, David Gealy, Ken Goldberg, “Dex-Net 3.0: Computing Robust Vacuum Suction Grasp Targets in Point Clouds Using a New Analytic Model and Deep Learning,” *2018 IEEE International Conference on Robotics and Automation (ICRA)*, Brisbane, QLD, 2018, pp. 5620-5627.

Publications in Review

- R1. **Albert Hao Li***, Philipp Wu*, Monroe Kennedy III, “Replay Overshooting: Learning Stochastic Latent Dynamics with the Extended Kalman Filter,” *2021 IEEE International Conference on Robotics and Automation (ICRA)*, Xi'an, China, 2021. ***Equal Contribution.**

Publications in Preparation

- P2. **Albert Hao Li**, Philipp Wu, Monroe Kennedy III, “One-Shot Learning Physics Models with the Meta-Extended Kalman Filter.”
- P1. **Albert Hao Li**, Monroe Kennedy III, “Safe Multi-Agent Collaborative Transport Without Communication.”

POSTER PRESENTATIONS	Ball Juggling on the Bipedal Robot Cassie Bay Area Robotics Symposium (<i>jointly with Bike Zhang</i>)	2019
REVIEWING ACTIVITIES	IEEE Robotics and Automation Letters (RA-L)	2020
TEACHING EXPERIENCE	Dynamic Systems, Vibrations, and Control Teaching Assistant	Fall 2020 Stanford University
SERVICE / OUTREACH	Policy Debate Mentor Mentored underrepresented high school students in policy debate through the Bay Area Urban Debate League’s mentorship program, helped develop scientific literacy on topics like robotics, automation, and artificial intelligence. Also mentored high schools in California and Texas remotely, coaching several teams to national success at the <i>Tournament of Champions</i> and the National Speech and Debate Association’s <i>National Tournament</i> .	06/15 - 06/17

STUDENT GROUPS	Space Technologies at Cal (STAC)	06/17 - 05/19
	Lunar Mining Team	UC Berkeley
	Studied lunar resource extraction sites in collaboration with NASA Ames, assisted with chassis/wheel design for lunar rover, researched extraction strategies for gaseous and/or mineral resources.	
	RoboBears	06/16 - 12/17
	Internal Vice President, Mechanical Design Lead	UC Berkeley
	Co-taught student-led course on combat robot design, led weapons design for 60 pound combat robot, led pre-competition machining/manufacturing process and electronics testing.	
TECHNICAL SKILLS	Languages: Python, MATLAB, Julia, Java, C++, LaTeX	
	Software: Robot Operating System (ROS), PyTorch, TensorFlow, Simulink	
	Mechanical Engineering: SolidWorks, Siemens NX, ASTM mechanical testing, statistical tolerance analysis, rapid prototyping	
RELEVANT COURSEWORK	Mechanical Engineering: Microprocessor-Based Mechanical Design, Lagrangian and Hamiltonian Dynamics, Mechanical Behavior of Materials, Heat Transfer, Mechatronics	
	Robotics and Control: Dynamic Systems and Feedback, Model Predictive Control, Loop Shaping, Linear Systems (SISO and MIMO), Nonlinear Systems, Robot Autonomy, Multi-Robot Control, State Estimation and Filtering, Optimal and Learning-Based Control, Robust and Adaptive Control	
	Computer Science: Data Structures, Discrete Math and Probability, Machine Learning, Decisionmaking Under Uncertainty, Convex Optimization, Meta- and Multi-Task Learning, Reinforcement Learning	