Eley Ng

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CONTACT

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RESEARCH INTERESTS

I am interested in enabling human-robot cooperation through long-horizon model-based planning and reinforcement learning.

EDUCATION

Stanford University Stanford, CA
PhD in Mechanical Engineering (Robotics, AI) Sept. 2019 – June 2023
Advisor: Monroe Kennedy III

Stanford University Stanford, CA
MS in Mechanical Engineering Sept. 2017 – June 2019

University of Texas at Austin Austin, TX
BS in Mechanical Engineering Aug. 2013 – May 2017
Advisor: Nanshu Lu

AWARDS

Joel H. Ferziger Memorial Fellowship	2020
NSF Graduate Research Fellowship	2017
UT Austin Leadership Collaborative Award	2017
Undergraduate Research Fellowship	2014
SanDisk Engineering Scholarship	2013
2nd Place National Winner, Toshiba Science Competition	2012

PUBLICATIONS

[4] **Eley Ng**, Ziang Liu, and Monroe Kennedy III. It Takes Two: Learning to Plan for Human-Robot Cooperative Carrying. *IEEE International Conference on Robotics and Automation (ICRA), 2023.*

[3] **Eley Ng**, Ziang Liu, and Monroe Kennedy III. Learning Action and State Sampling Distributions for Human-Robot Collaboration. *Workshop on Learning from Diverse, Offline Data, Robotics: Science and Systems (RSS), 2022.*

[2] George E. Gorospe Jr., Matthew J. Daigle, Shankar Sankararaman, Chetan S. Kulkarni, and **Eley Ng**. GPU accelerated prognostics. *Annual Conference of the PHM Society, 2017.*

[1] Shixuan Yang, **Eley Ng**, and Nanshu Lu. Indium Tin Oxide (ITO) serpentine ribbons on soft substrates stretched beyond 100%. *Extreme Mechanics Letters, 2015.*

WORK EXPERIENCE

NASA Ames, Mountain View, CA June - August 2017
Research internship at the Diagnostics and Prognostics Group in the Intelligent Systems Division with Christopher Teubert.

Intel Corporation, Hillsboro, OR June - August 2016
Internship in mechanical design with the New Technology Group.

Oregon State University, Corvallis, OR June - August 2015
Research Internship in soft robotics under Yigit Menguc.

Sandia National Laboratories, Albuquerque, NM 2014 - 2015
Internship in computation and simulation analysis.

TEACHING

CS 339R (ME 326): Collaborative Robotics Winter 2022
Teaching Assistant, Stanford University.
This course focuses on how robots can be effective teammates with other robots and human partners. Concepts included characterizing task objectives, robot perception and control, teammate behavioral modeling, inter-agent communication, and team consensus. Course involves teaching through literature review, research proposals, and group project working with real robots (Interbotix LoCoBot) in ROS/Python/C++.
Average student rating: 4.25/5.00.

ENGR 15: Dynamics Fall 2021
Teaching Assistant, Stanford University.
This course teaches the application of Newton's Laws to solve 2-D and 3-D static and dynamic problems, particle and rigid body dynamics, freebody diagrams, and equations of motion, with application to mechanical, biomechanical, and aerospace systems. Numerical simulations and dynamic response.
Average student rating: 4.33/5.00.

MENTORING

Ziang Liu (M.S. student in CS, Stanford University), Bryn M. Hughes (B.S. student in CS, Stanford University), Ahad Rauf (Ph.D. student in ME, Stanford University), J.D. Kelly (B.S. student in EE, Stanford University)

SKILLS

Programming Python, MATLAB, C++.
Data Science NumPy, Matplotlib, SciPy.
Learning PyTorch, PyTorch Lightning, MuJoCo, ROS.

OUTREACH

Stanford Mechanical Engineering Women's Group 2020 – Present
Co-organize Women's Seminar Series (ENGR 311A) and social events with regular attendance of 30, initiated Dine with Professor events to open discourse between the graduate student community and women in STEM faculty.

SERGE Outreach Member and Volunteer 2020

Read applications and provided lab tours for the Stanford Exposure to Research and Graduate Education (SERGE) Program, which exposes underrepresented prospective graduate students to graduate research.

Research Mentor, SURI Program 2019 - 2020

Mentored Stanford CS and EE undergraduate research students on two projects: 1) developing an American Sign Language detection and generator mobile app, and 2) online simulator for robotic task.

First Year ME PhD Mentorship Program 2019 - 2020

Mentored first year ME PhD student.

WME President, VP, Outreach Chair 2014 - 2017

Sought and secured $8,500 (1000% increase in funding, starting from a budget deficit) from corporate sponsors in 2016 as club president. Initiated team projects (3D-printed prostheses), coordinated a series of speakers from industry and academia for weekly meetings, coordinated outreach events, and organized recruitment events in various leadership roles.

MEUAB Nominated Member 2016 - 2017

Selected by the department to serve on the UT Austin Mechanical Engineering Undergraduate Advisory Board to discuss and implement department and curriculum changes with faculty of Mechanical Engineering.