Claire Liang

Cornell University
PhD Student, Department of Computer Science

Curriculum Vitae

Personal

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Education

Cornell University
Ph.D. in Computer Science [June 2017 - Expected May 2022]
B.S. in Computer Science, Philosophy minor [Sept 2013 - May 2017]

Publications

Peer-Reviewed Conference Publications

C. Liang, Julia Proft, Erik Andersen, and Ross A. Knepper. "Implicit communication of actionable information in human-AI teams". In: *Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI) 2019*. **Best Paper Honorable Mention**. Glasgow, United Kingdom, May 2019.

R. Knepper, C. Mavrogiannis, J. Proft, **C. Liang**. “Implicit Communication in a Joint Action”. In: *International Conference Human Robot Interaction (HRI) 2017*. **Best Paper Finalist**. Vienna, Austria, Mar. 2017.

Y. Cao, **C. Liang**, H. Naveed, Y. Li, M. Chen and Q. Nie. “Modeling spatial population dynamics of stem cell lineage in tissue growth”. In: *Proceedings of the IEEE Engineering in Medicine and Biology Society*. 2012, 5502.

Workshop Publications

C. Liang and Ross Knepper. "Minimalist motion planning using global topological guarantees". In: *Workshop on Topological Methods in Robot Planning.* Proceedings of the IEEE International Conference on Robotics and Automation (ICRA). Montréal, Canada, May 2019.

C.Liang, J. Proft, R. Knepper. “Implicature-Based Inference for Socially-Fluent Robotic Teammates”. In: W*orkshop on Mathematical Models, Algorithms and Human-Robot Interaction.* Proceedings of the Robotics Science and Systems Conference. July 2017.

Honors and Awards

Teaching Assistant Award, Foundations of Robotics (Fall 2018), Cornell Computer Science Department

Honorable Mention, Best Paper Award, ACM Conference on Human Factors in Computing Systems (CHI), for “Implicit communication of actionable information in human-AI teams”

Finalist, Best Technical Paper Award, ACM/IEEE International Conference on Human-Robot Interaction (HRI), for “Implicit Communication in a Joint Action”

Invited, Travel Grant, The Institute for Mathematics and its Applications (IMA) and St. Olaf College, for “Tutorial on Multiparameter Persistence, Computation, and Applications”

Research

Cornell University | Robotic Personal Assistants Lab [2017-Present]
PhD Student, Advisor: Ross Knepper
Project: Incorporating topological techniques for minimalist sensing robot path planning.

KTH Royal Institute of Technology | Division of Robotics, Perception, and Learning [2019]
Visiting Scholar, Advisor: Florian T. Pokorny
Project: Navigation using signage in man-made environments given limited local sensing.

Cornell University | Robotic Personal Assistants Lab [2016-2017]
Undergraduate Researcher, Advisor: Ross Knepper
Project: Implicature as a Collaborative strategy in the game Hanabi

Toyota Technological Institute at Chicago | Department of Computer Science [2015]
Undergraduate Researcher, Advisor: Jinbo Xu
Project: Deep Learning methods for predicting protein crystallizability

University of Illinois at Chicago | Department of Bioengineering [2012-2013]

Student Researcher, Advisor: Youfang Cao
Project: Stochastic modeling of stem cell lineage and spatial population dynamics in tissue growth.

University of California, Irvine | Center for Mathematical & Computational Biology [2011]
Student Researcher, Advisor: Qing Nie
Project: ODE and Discrete methods for stem cell proliferation modeling.

Teaching

CS 4750 | Foundations of Robotics [Fall 2018] | Teaching Assistant | **Teaching Assistant Award**
CS 4750 | Foundations of Robotics [Fall 2017] | Teaching Assistant
CS 4820 | Analysis of Algorithms [Spring 2017] | Teaching Assistant
CS 4786 | Machine Learning for Data Science [Fall 2016] | Teaching Assistant

Relevant Coursework

Computer Science: Foundations of Artificial Intelligence, Practicum in Artificial Intelligence, Machine Learning for Intelligent Systems, Machine Learning for Data Science, Introduction to Analysis of Algorithms, Mathematical Foundations for the Information Age, Advanced Programming Languages, Graduate Level Computer Vision, Advanced Artificial Intelligence, Introduction to Mobile Manipulation, Graduate Level Analysis of Algorithms, Seminar in Artificial Intelligence, Robotics Seminar, Data Structures & Functional Programming, Systems Programming, Operating Systems
Mathematics: Introduction to Analysis, Manifolds & Differential Forms, Abstract Algebra, Introduction To Topology, Basic Probability

Service

Cornell Robotics Graduate Student Organization [Spring 2019 - Present]
President and Founder
President of Cornell's Robotics Graduate Student Organization, an organization to unify the graduate robotics community across 5 departments and 2 campuses.

CUEmpower [Sept 2013- Present]
Mentor
Long term mentoring of undergraduate students from underrepresented minority groups for Cornell University Diversity Programs in Engineering.

Expanding Your Horizons [Spring 2018, Spring 2019]
Workshop Leader

One-day conference for 7th-9th grade girls with graduate-student-led workshops intended to encourage futures in STEM

Visit Day Czar [Spring 2017]
Czar
Responsible for arranging and organizing visit day activities for the Cornell University Computer Science incoming prospective PhD class of 2018.

Milk Czar [fall 2018 - Present]
Czar
Responsible for perishable good purchasing and account management for the Cornell University Department of Computer Science.

Experience

Chicago Mercantile Exchange Group [May 2016 – Aug 2016]
Data Science Intern
Project: Anomaly detection for futures and options behavior.