

Stanford



C. Karen Liu

Associate Professor of Computer Science

Bio

BIO

C. Karen Liu is an associate professor in the Computer Science Department at Stanford University. Prior to joining Stanford, Liu was a faculty member at the School of Interactive Computing at Georgia Tech. She received her Ph.D. degree in Computer Science from the University of Washington. Liu's research interests are in computer graphics and robotics, including physics-based animation, character animation, optimal control, reinforcement learning, and computational biomechanics. She developed computational approaches to modeling realistic and natural human movements, learning complex control policies for humanoids and assistive robots, and advancing fundamental numerical simulation and optimal control algorithms. The algorithms and software developed in her lab have fostered interdisciplinary collaboration with researchers in robotics, computer graphics, mechanical engineering, biomechanics, neuroscience, and biology. Liu received a National Science Foundation CAREER Award, an Alfred P. Sloan Fellowship, and was named Young Innovators Under 35 by Technology Review. In 2012, Liu received the ACM SIGGRAPH Significant New Researcher Award for her contribution in the field of computer graphics.

ACADEMIC APPOINTMENTS

- Associate Professor, Computer Science
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

HONORS AND AWARDS

- SIGGRAPH Significant New Research Award, ACM (2012)
- Alfred P. Sloan Research Fellowship, Alfred P. Sloan Foundation (2010)
- Young Innovators Under 35, MIT Technology Review (2007)
- CAREER Award, National Science Foundation (2007)

PROFESSIONAL EDUCATION

- BS, National Taiwan University , Computer Science (1999)
- MS, University of Washington , Computer Science (2001)
- PhD, University of Washington , Computer Science (2005)

LINKS

- <https://www.cs.stanford.edu/~karenliu>: <https://www.cs.stanford.edu/~karenliu>

Teaching

COURSES

2020-21

- Character Animation: Modeling, Simulation, and Control of Human Motion: CS 348E (Spr)
- Computer Graphics in the Era of AI: CS 348I (Aut)

2019-20

- Character Animation: Modeling, Simulation, and Control of Human Motion: CS 348E (Spr)

STANFORD ADVISEES

Master's Program Advisor

Fenglu Hong, Abhishek Sinha, Takara Truong

Doctoral (Program)

Michelle Guo, Yifeng Jiang

Publications

PUBLICATIONS

- **Personalized collaborative plans for robot-assisted dressing via optimization and simulation** *AUTONOMOUS ROBOTS*
Kapusta, A., Erickson, Z., Clever, H. M., Yu, W., Liu, C., Turk, G., Kemp, C. C.
2019; 43 (8): 2183–2207
- **Synthesis of Biologically Realistic Human Motion Using Joint Torque Actuation** *ACM TRANSACTIONS ON GRAPHICS*
Jiang, Y., Van Wouwe, T., De Groote, F., Liu, C.
2019; 38 (4)
- **Sim-to-Real Transfer for Biped Locomotion** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Yu, W., Kumar, V. C., Turk, G., Liu, C.
2019
- **Policy Transfer with Strategy Optimization**
Yu, W., Liu, C., Turk, G.
2019
- **Multidimensional Capacitive Sensing for Robot-Assisted Dressing and Bathing**
Erickson, Z., Clever, H. M., Gangaram, V., Turk, G., Liu, C., Kemp, C. C.
2019