

Title:

Design and Control of Soft Robotic Characters

Abstract:

As the field of Soft Robotics matures, the complexity of the tackled problems will inevitably increase, and computational tools for simulation and optimization will become key aspects of soft robot design and control. In this talk, I will highlight how computation paves the way toward industrial-grade robots that are lightweight and inexpensive, yet functional. Specifically, I will discuss how we can leverage differentiable simulation to (1) accurately characterize soft robotic materials, (2) computationally control very soft robotic systems while suppressing visible mechanical oscillations, and (3) automate the design of proprioceptive soft robots with desired functionality.

Short Bio:

Moritz Bächer is a Research Scientist at Disney Research, where he leads the Computational Design and Manufacturing group. He is deeply passionate about solving real-world problems in computational robotics, fabrication, and architecture. His core expertise is the development of differentiable simulators to tackle complex design, control, and characterization problems in (soft) robotics, architecture, and computer graphics. Before joining Disney, he received a Ph.D. from the Harvard School of Engineering and Applied Sciences and graduated with a master's from ETH Zurich.