

# Toward Pervasive Robots

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## Abstract

The digitization of practically everything coupled with the mobile Internet, the automation of knowledge work, and advanced robotics promises a future with democratized use of machines and wide-spread use of robots and customization. However, pervasive use of robots remains a hard problem. Where are the gaps that we need to address in order to advance toward a future where robots are common in the world and they help reliably with physical tasks? What is the role of geometric reasoning along this trajectory?

In this talk I will discuss challenges toward pervasive use of robots and recent developments in geometric algorithms for customizing robots. I will focus on a suite of geometric algorithms for automatically designing, fabricating, and tasking robots using a print-and-fold approach. I will also describe how geometric reasoning can play a role in creating robots more capable of reasoning in the world. By enabling on-demand creation of programmable robots, we can begin to imagine a world with one robot for every physical task.

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