Imagine you’re crossing a busy street. There’s a crowd of people walking toward you, but somehow, you manage to weave through without bumping into anyone. This might happen every day for many of us, and we don’t even think about it. But for self-driving cars or mobile robots, this is a big challenge. They can’t predict what others will do by noticing small movements like eye contact or facial expressions. So, how do they avoid moving obstacles?

Robots have to predict where obstacles will be, based on their current position and direction. This turns into a math problem that the robot's computer needs to solve. Therefore, my research focuses on creating a system that helps robots solve this problem quickly. The goal is to let robots move safely and efficiently, without crashing into anything.