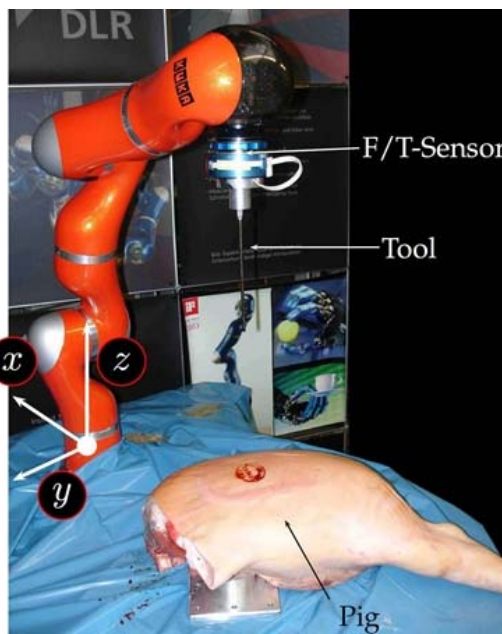


Knife-Wielding Robots Could Soon Invade the Kitchen

By Adam Hadhazy, TechNewsDaily Staff Writer
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A robotic arm before it stabs a pig leg as part of experiments to test out a system that could prevent injuries from blade-wielding robots in the home. Credit: Sami Haddadin et al.

If that Roomba vacuuming underfoot is any indication, robots are likely to become more of a household fixture in the years ahead. But if robots are ever to handle "edgier" tasks, say, like chopping up veggies in the kitchen, people will need to feel safe around domestic machines wielding sharp tools.

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To gauge the kind of harm a robot could do to its owners, German researchers recently studied the mechanized stabbing and hacking of a blob of silicone, a dead pig's leg and – yes – a live human volunteer's arm, the study leader in fact.

"We want to understand the injury mechanisms of humans during robot-human impacts in order to find the best possible design and safety behavior for a robot," said Sami Haddadin, an engineer at the Institute of Robotics and Mechatronics of the German Aerospace Center (DLR).

The simulated soft-tissue damage revealed that, as one might expect, [robots can deal out some lethal injuries](#). To

prevent such accidents from happening, the researchers tested out a collision detection method that halts a cutting robot's unintentionally murderous motion.

As proof that the safety system worked when activated, Haddadin suffered nothing more than a scratch.

"I was absolutely sure that the system is capable of such outstanding performance, since I designed, implemented, and tested these methods," Haddadin told TechNewsDaily.

Previous studies conducted by Haddadin's group and others have looked at the blunt trauma heavy robots can cause when they bump into people – crash test dummies were battered in those trials – but this is the first time flesh cleaved by a machine has been assessed, Haddadin said.

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