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HOME   COMPUTING $2.9 MILLION PIZZA-MAKING ROBOT STILL CAN'T MAKE PIZZA

$2.9 Million Pizza-Making Robot Still Can't Make Pizza

By Joel Hruska on August 15, 2017 at 11:45 am | 18 Comments

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Fear of AI and robotics is fairly common in humans. There have been ample predictions about how the robot/AI revolution will destroy an enormous number of jobs, while potentially posing an existential risk to the long-term survival of the human race. In the real world, however, our robot designs are much closer to a manufacturing robot on an assembly line than, say, Data (or even Bender). Case in point: Rodyman, the $2.9 million robot. For the past four years, Professor Bruno Siciliano and Prisma Lab in Italy have been trying–and not entirely succeeding–to teach a robot how to make pizza.

"Preparing a pizza involves an extraordinary level of agility and dexterity," Professor Siciliano told

Scientific American earlier this summer. Rodyman can put toppings on a pizza, but it has real trouble with the dough, and has yet to master the art of tossing without tearing the dough apart.

This project has a serious goal, despite the odd-seeming task. The entire point of the Rodyman project, as stated by Prisma Lab, is to create a "unified framework for dynamic manipulation where the mobile nature of the robotic system and the manipulation of non-prehensile non-rigid or deformable objects will explicitly be taken into account."

The Prisma Lab website continues:

> Novel techniques for 3D object perception, dynamic manipulation control and reactive planning will be proposed. An innovative mobile platform with a torso, two lightweight arms with multi-fingered hands, and a sensorized head will be developed for effective execution of complex manipulation tasks, also in the presence of humans. Dynamic manipulation will be tested on an advanced demonstrator, i.e. pizza making process, which is currently unfeasible with the prototypes available in the labs. The research results to be achieved in RODYMAN will contribute to paving the way towards enhancing autonomy and operational capabilities of service robots, with the ambitious goal of bridging the gap between robotic and human task execution capability.

What does a robot like on its pizza? MANCHOVIES. I'll be here all week, folks. Photo by Prisma Lab.

Put more simply: The goal is to create a robot with vastly improved dexterity that can handle complex tasks that require a delicate touch. It's not hard to see how necessary such capabilities are if we ever want to build robotics that can act as assistance devices to the elderly, infirm, or physically disabled. The more dexterity that can be built into the system, the greater the range of tasks that robots will be able to perform.
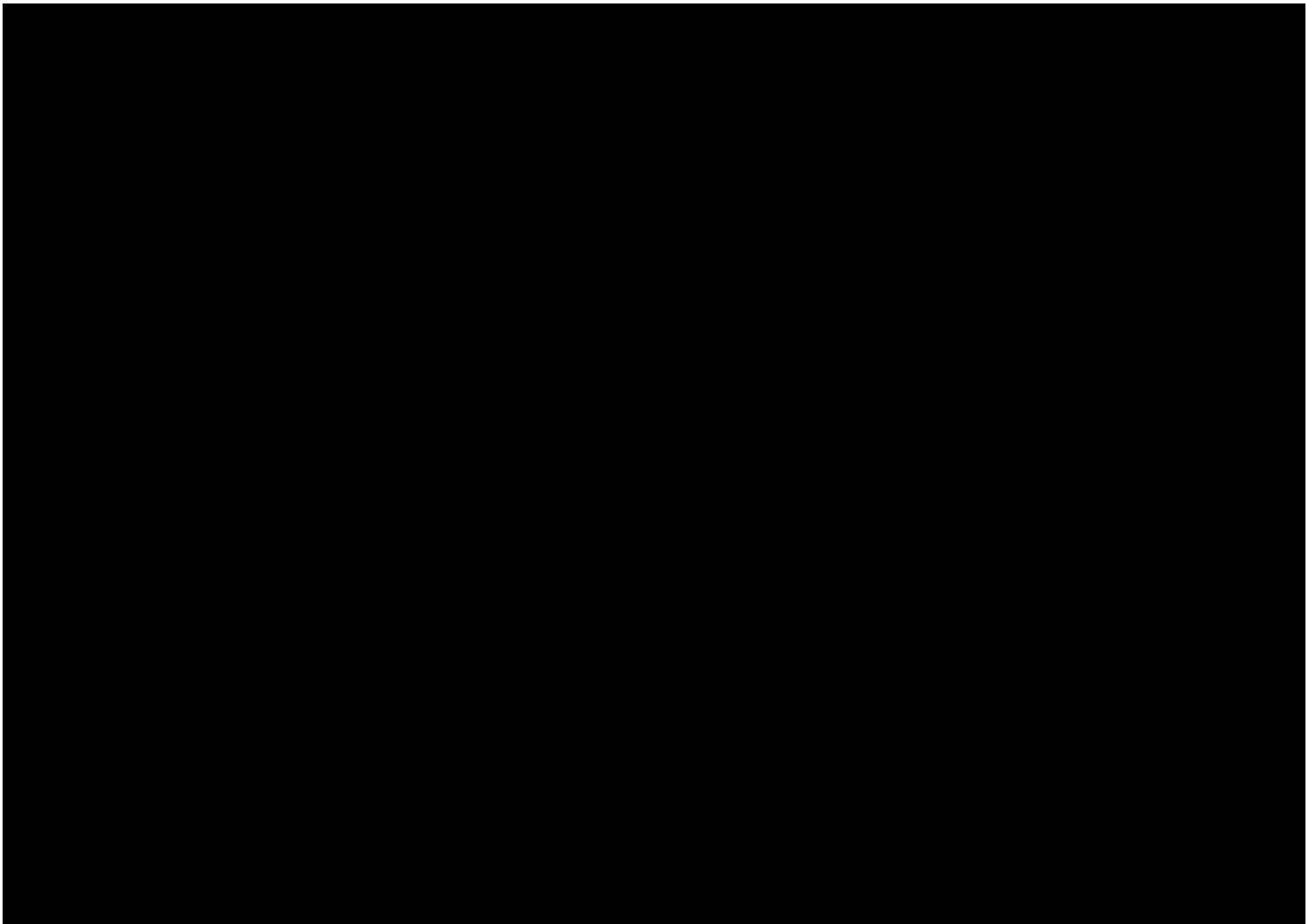
The video above shows part of the training process. The video is in Italian and Google's Auto Translate subtitle feature is truly hilariously terrible, so I recommend watching it without attempting to comprehend the audio. The gentleman making pizza while Rodyman imitates his movements is Enzo Coccia, a highly skilled *pizzaiolo* (pizza maker). Coccia wears a motion capture suit while the robot observes him and attempts to copy his movements. According to Professor Siciliano, Rodyman has the ability to learn from its mistakes and has improved over time, though it still can't manage the pizza dough problem.

Rodyman is scheduled to make his debut at the Naples Pizza Festival (officially now the best thing ever) in May of 2018. Hopefully his issues will be ironed out by then. If not, that $2.9 million funding grant from the EU will represent a lot of blown dough.

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