

Autonomous robot Myon joins the cast at a Berlin opera

July 2 2015, by Nancy Owano



"My Square Lady" last month opened in Berlin at the Komische Oper. The outstanding feature about this production is that a character named Myon plays a key role on stage, and Myon is a robot—of the white,

shiny variety that makes no pretense of being anything but.

The Neurorobotics Research Laboratory at Humboldt University in Berlin is behind Myon. Researchers and cast worked for two years to teach Myon in order to get the robot, literally, to this stage.

The German/British performance collective Gob Squad (concept, direction, stage design, costumes, part of cast) helped in this project. The opera lasts two hours and 45 minutes with one intermission.

What is noteworthy is that there is no person controlling Myon offstage. Myon is an autonomous humanoid. Myon was taught to sing with the orchestra, move around the stage and [react](#) to cues, both visual and auditory, said Jessica Conditt in *Engadget*.

Sabine Schwab in *International Business Times*, regarding the robot's training, said it was "taught how to interact with the singers in a similar way as a child learns new [actions](#)." During the performance Myon sees with its camera and hears with its microphone.

Story line: Myon goes around trying to learn what it means to be human and feel emotion. The Gob Squad leads Myon on "a voyage of discovery" through each department of the Komische Oper Berlin

The opera notes pose the questions "What makes a person a person? How could an object or a 'simple life-form' be transformed into one?"

"The opera is about showing the robot what it means to be a human being with emotions," Bernhard Hansky, a singer from the opera, told Emiko Jozuka in *Motherboard*. "Every piece that we sing for him in the show is about a different emotion."

Jozuka wrote about Myon's features: Its size is like that of an eight-year-

old [child](#).

According to the Laboratory, Myon weighs 16 kg. "The robot consists of six body parts (head, torso, arms, and legs) and is—all in all—1.25m tall and weighs 16 kg, including the shells. A total of 48 actuators is used to control 32 degrees of freedom (DOFs). Except for the eye, a single type of actuator (Dynamixel RX-28 by Robotis) is used for all joints. Joints which need a large amount of torque, e.g. the knee, are driven by multiple actuators in [parallel](#)."

As such, the Neurorobotics Research Laboratory also said, "we present the world's first [humanoid](#) robot whose body parts can completely be removed during the operation and flange-mounted again. All [body parts](#) retain their separate functionality because they are autonomous in three ways: energy supply, computational ability, and the neural network itself are completely distributed over the decentralized robot."

More information: [english.komische-oper-berlin.de/.../my-square-lady/](#)

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