

Dancing robot swan triggers emotions

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The approximately one-meter-tall dancing swan is designed on the basis of a robot that was previously a student's degree project. The robot was built by a modular system and in the white wings, neck, beak and feet there are a total of 19 different joints, which makes it very flexible. Credit: Kerstin Gauffin

The Dying Swan is sometimes moving smoothly and gently, sometimes in a dramatic and fiery manner, as Tchaikovsky's majestic music from the ballet Swan Lake is playing. Yet this is no ordinary ballet dancer, but a robot in the form of a swan, created at Mälardalen University and choreographed by professional dancer Asa Unander-Scharin.

The swan [robot](#)'s just over four-minute-long dance has so far been seen only by a select few. But it has already made a big impression. Tearful eyes and words like "touching", "fascinating" and "beautiful" are some of the reactions.

"We want to explore the limits of what a robot can do, what human expressions it can mimic, and how it affects people's perception of the robot when it makes an appearance in art and dance," says Lars Asplund, Professor of Computer Science at Malardalen University in Vasteras, Sweden.

His research field is robotics and he has designed the approximately one-metre-tall dancing swan on the basis of a robot that was previously a student's degree project. The robot was built by a modular system and in the white wings, neck, beak and feet there are a total of 19 different joints, which makes it very flexible.

The idea for the dancing robot was hatched jointly by Lars Asplund and his colleague Kerstin Gauffin, who works with theatre at Mälardalen University.

"With our swan we are showing that we can use robots in new ways - simply because they are beautiful and give the audience new experiences," says Kerstin Gauffin, who wants to see robots appear on stages along with "ordinary" actors.

She got in touch with the professional dancer and choreographer Asa Unander-Scharin, who now has designed the robot's special dance to the tunes of the famous composer Tchaikovsky. By systematically having the robot swan perform each movement by itself - right wing up, neck down, etc - Unander-Scharin has "taught" the robot swan her choreography because the computer inside it "recalls" the movement pattern and then plays it as an entire dance program.

Asa Unander-Scharin is used to working with stage performances in which the choreography interacts with music, scene space and new technology. She has also done research in the field and wrote the thesis "Human mechanics and soulful machines: choreographic perspectives on

human qualities in body movement".

"I think it's exciting to see how emotionally touched people can get by machines, and to do the choreography for the swan robot has been great fun," says Asa Unander-Scharin.

On September 23-26, Malardalen University's dancing robot will be shown for the first time in public, at Sweden's largest book fair in Gothenburg.

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