

# Robots perform Shakespeare to learn how to save people

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(PhysOrg.com) -- Flying robot fairies are joining human actors in Texas A&M University's production of William Shakespeare's *A Midsummer Night's Dream*, which runs through Sunday (Nov. 15) in the Rudder Forum.

A pizza-sized AirRobot helicopter used for military operations in Iraq, and six toy radio controlled helicopters slightly bigger than a fist, are part of the high-tech production directed by Amy Hopper, from Texas A&M's Department of Performance Studies.

Besides being a fun way to introduce science to the general public, researchers from the Department of Computer Science and Engineering and the Department of Electrical and Computer Engineering are using the experience to learn more about how the [actors](#) and the audience react to the flying devices.

“Imagine a disaster with people unsure of where to go or how to handle a riot,” says computer science and engineering professor Robin Murphy, who is an expert in rescue robotics. “It’s now possible for these unmanned aerial vehicles to be used for evacuation or for crowd control. But what’s missing is understanding what makes a person trust or fear the robot.”

Over the month of rehearsals and during the first four performances last weekend, Murphy and her colleagues, Dylan Shell and Takis Zourntos, have documented several surprises. One was that people thought the

robots were smarter and tougher than they really were. Invariably, people would initially handle the robots roughly and launch them from a variety of positions, leading to damage and crashes. The actors also showed little fear of the robots, even the larger one.

“This means people might ignore a robot’s instructions or worse walk into rotor blades on a large robot and get hurt,” Murphy says. “The robots by themselves apparently aren’t scary, so we need additional research to make them move like friendly hummingbirds or angry bees to get the desired effect.”

The roboticists quickly coached the actors and made sure anyone interacting with a robot understood the limitations, leading to another surprise: If a small robot crashed into the audience that had not been instructed on how to handle the robot, the audience members would mimic how the actors treated the robots. They learned how to react to robots by watching others.

The performers are enthusiastic about the robots.

“The idea of flying robot fairies was one I had early on, as soon as I heard about the possibility of a collaboration with the Department of [Computer Science](#) and Engineering,” Hopper says. “What’s great is that they have been a part of the production from the beginning and the robots seem more and more like characters that have always been a part of the story. To see them flying, spinning and bouncing through the air just adds to the magic and mystery of the world Shakespeare created.”

This is first known production of any Shakespeare play with mobile robots. A 2008 production of *Cymbeline* by the Quantum Theater and Carnegie Mellon used robotic technology but not robots.

Performances on Friday and Saturday are scheduled for 8 p.m., with a 2

p.m. performance on Sunday. A [robot](#) “petting zoo” is scheduled following the Sunday performance.

Provided by Texas A&M Engineering

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