



Thursday, May 9, 2002

OU professor invents robotic lawn mower

Have you ever wished your kid would mow the lawn without complaints or excuses? OU engineering professor Ka C. Cheok has a better way to get the task done. He has invented a robot that will do the task — and it won't ask for an allowance.

His robotic lawn mower is designed to start up at a preprogrammed time set by the owner, drive itself out of the garage, mow the lawn, and then put itself away for recharging. Cheok is even designing capability for the robot to contact the owner at work or another remote location via phone or e-mail to report a problem. Say a bicycle is blocking the robot's path on the lawn. Cheok envisions the robot asking the owner what to do by sending a message to his or her personal digital assistant. Then the owner could key in or sketch commands about how the robot can best handle the problem.

A company, SGS, or Self-Guided Systems, has been funding Cheok's lawn mower project with a grant of \$120,000 since the beginning of 2000. Many lawn mower manufacturers have expressed interest in sponsoring further research. The robotic lawn mower could have a huge impact in the United States commercial and residential mowing industries, which total about \$10 billion per year, according to the Professional Lawn Care Association of America. The mower could be ready for the market in a couple years, Cheok said, and would cost about \$1,200.

The quiet electric mower keeps track of where it is by bouncing laser beams off of reflectors set up on the periphery of a lawn. It also mulches the clippings so there's no need for a bag. The mower can autonomously follow its planned mowing pattern within 2 cm, Cheok said. Now Cheok and his team are refining the system to detect foul weather and negotiate hilly terrain.

Applications for this type of invention are not limited to the lawn. Cheok envisions similar robots for vacuuming, waxing floors, cleaning windows, plowing fields and harvesting crops, and serving as security patrollers that monitor noise, intrusion, motion and other problems such as fires.

"Creating intelligent autonomous unmanned ground vehicles with useful purpose is a perfect research and development project that is academically and commercially challenging and rewarding," Cheok said.

Cheok's team includes Edzko Smid, an OU research associate who is the principal software designer; John Wohler, laser optics specialist; Gang Liu, a laser electronics developer; Jerry Atkinson, business consultant; Jacek Jurzak, mechanical design specialist; and Ruben de Schipper, a post graduate research scholar. Paul Angott, president and owner of SGS, is the entrepreneur who originally envisioned the laser-guided lawn mower.

Cheok and Smid work in the School of Engineering and Computer Science's Department of Electrical and Systems Engineering. They have been involved with the annual Intelligent Ground Vehicle Competition, hosted by OU over the past 10 years.

SUMMARY

Have you ever wished your kid would mow the lawn without complaints or excuses? OU engineering professor Ka C. Cheok has a better way to get the task done. He has invented a robot that will do the task — and it won't ask for an allowance. His robotic lawn mower is designed to start up at a preprogrammed time set by the owner, drive itself out of the garage, mow the lawn, and then put itself away for recharging.

Created by CareTech Administrator (webservices@caretechsolutions.com) on Thursday, May 9, 2002
Modified by CareTech Administrator (webservices@caretechsolutions.com) on Thursday, May 9, 2002

Article Start Date: Thursday, October 2, 2003