No Tree Is Safe From This Chainsaw-Wielding Robot

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Posted 25 Feb 2014 | 16:20 GMT

Of all the things you should not give robots—lasers, knives, swords—one of the worst is possibly chainsaws. I mean, chainsaws are noisy in a terrifying sort of way and awfully messy. They’re especially dangerous if you’re a tree, in that if you’re a tree, there is a significantly increased likelihood that this pruning robot will climb up you and violently lop off as many of your limbs as it can reach.
The reason why a pruning robot is actually a really good and important idea is that climbing trees and then holding on with one hand (or no hands) while sawing big heavy bits of them off is rather incredibly dangerous (http://www.youtube.com/watch?v=VEpXASQ7seY), with injury rates about 10 times that of working in a factory. This teleoperated robot means that you can stand very, very far away while the pruning gets done, and the 'bot seems to do quite a good job, able to climb up and down trees with no trouble while cutting branches off in a spiral motion.

At 13 kilograms, the robot can drive straight up trees between 6 and 25 centimeters (2.3-9.8 in) in diameter at 0.25 m/s, while tackling branches with a diameter of less than 5 cm. It can automatically adapt to a variety of tree morphologies (that's a thing, right?), and is relatively energy efficient (for whatever that's worth) since it can support itself passively on the tree by using its own weight to securely grip the trunk.

Most of the testing of this robot has so far been in an "experimental forest," where the trees seem to be all about as straight and perfect as a sprouting telephone pole. Continuing research will involve making the robot a bit more robust towards different sorts of trees and foliage, and teaching it the difference between trees that it should try to prune and tall humans that it shouldn't.

"A Pruning Robot With a Power-Saving Chainsaw Drive," by Yasuhiko Ishigure, Katsuyuki Hirai, and Haruhisa Kawasaki from Marutomi Seiko Co. and the University of Gifu, in Japan, was presented at the 2013 IEEE International Conference on Mechatronics and Automation.