

Diabologic: “Home, Jeeves!”

by Frank Dolinar

In the recent film “I, Robot”, there are a number of scenes showing cars traveling, safely, on automated highways at speeds much higher than possible on our highways today.

And there are no traffic jams.

These cars are, for the most part, being driven by an onboard Artificial Intelligence (AI) that knows the car’s location (no doubt via evolved GPS), its intended destination, and the detailed status of the car and other nearby vehicles (all updated every few thousandths of a second).

For most people, in the US at least, this letting go of the driving the car is anathema. You know the drill. Everyone thinks of themselves as a safe and “excellent” driver and aren’t about to let some robot do the driving.

Personally, I’d do a lot more travel if I could travel somewhere, take my car along, and not have to deal with the traffic or distance involved. I’d rather read or nap.

I’ve been thinking about how realistic this possibility is based on current technology, and I’ve come to the conclusion that it’s probably closer than most people realize.

Let’s start back in 2005 and the DARPA Grand Challenge.

DARPA is the US Department of Defense Advanced Research Projects Agency. This Grand Challenge was for driverless cars on a 132 mile off-road course in California's Mohave Desert. The first team to successfully complete the course within a 10 hour time limit stood to win a one million dollar prize. The competition was both popular and fierce. Of the 23 finalists, only five finished the race and one of those took longer than 10 hours.

The winner was Stanford University’s “Stanley” (6 hours, 53 minutes, and 58 seconds).

It’s one thing to trundle around in the desert, it’s quite another to navigate city traffic.

Fast forward to DARPA’s 2007 Grand Urban Challenge. This event, held on November 3, 2007 at the former George AFB in Victorville, CA, required the robots to drive in traffic, merge pass, park, and negotiate intersections. It was the first time robots had interacted with both manned and unmanned traffic in an urban environment. And this wasn’t just a timed event. The robots were also judged on their ability to follow California driving rules.

This time, the winner was Carnegie-Mellon’s Tartan Racing Team, which took home a two million dollar first prize. Stanford won the one million dollar second prize. Virginia Tech won the five hundred thousand dollar third prize.

These are all very interesting, of course, but by now you're probably wondering when we will start seeing these capabilities in our own cars.

You may be surprised to discover that AI has already begun to insinuate itself into our lives. If you use computers in your daily work, the help system is usually what is known as a "limited-domain expert system", i.e. a bit of smart software that understands the kinds of things that the software you are using can do, that recognizes when you try to do one of those things, and offers help.

Modern cars are very smart, mobile networks with dozens of computers tasked with managing everything from ignition timing to the response of the suspension.

More intelligence is coming. I have recently begun to see ads for Mercedes-Benz that have onboard software to warn you if your driving becomes erratic (presumably because you are sleepy) and sensors that identify a sudden change in spacing between you and the car in front of you, information the software will respond to and begin slowing the car before you realize there is a problem.

These facilities implemented as sophisticated AI systems will, over the next ten years or so, progressively make their way into our cars.

Eventually we'll be able to get in our cars after a long day's work – or after a really great party – and simply say, "Home, Jeeves!"