

May 25, 2012

Press Release

FNU academic develops landmark robotics innovation

A Fiji National University academic has developed a robot that is the first to be able to get across pedestrian crossings on its own.

The robot-development project was part of Dr. Aneesh Chand's doctorate studies in Japan.

A Lecturer II at the College of Engineering, Science and Technology (CEST), Dr. Chand presented a seminar on his research titled, "Outdoor Robot Navigation: Autonomous Road-Crossing Mobile Robot for Real World Urban Environments" at the College last week.

The presentation described the system design and performance of such a robot intended for real world urban environments.

"The robot has a camera, which is its principal sensor. With the incoming video, it is possible to detect the push button boxes at the crossing and the zebra design using some image processing techniques," Dr. Chand said.

To detect the button boxes, the robot uses what is known as a "Haar Classifier", which is a real time detection technique.

"This is identical to the technology you see in some digital cameras where the camera can detect human faces," Dr. Chand said.

The robot is able to cross the road alone, activate pedestrian push-buttons and carry out many other integrated functions such as zebra crossing detection and pedestrian light detection, all in a real world outdoor environment. "Other robots are very limited in their functionality, often focusing on just a few functions," Dr. Chand added.

Returning to FNU early last month after working on the robot for three years, Dr. Chand said he will not be working on developing the robot further, but other students at his former university in Japan may continue working on it.

Further work on the robot model will involve making improvements so that the robot works even more strongly.

CEST Assistant Professor, Dr Francis Mani, said the presentation caused him to read up on robotics, which helped him become aware of the recent advances in robotics and artificial intelligence.

"I was amazed to what an extent a robot can behave like real human beings - press the button and wait for the light and then cross the road," he said.

Dr. Chand said as this was the first attempt at developing such a robot and it was done by one individual within a limited timeframe, it is far from perfect and needs lots of improvements before it can be used properly.

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