SDSU
presents
a thesis defense for
Master of Science
degree in
Computer Science

Wednesday,
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1:00pm
GMCS 555

SAN DIEGO STATE
UNIVERSITY
Leadership Starts Here

Vigya Lnu

Robotic Person Following in a Crowd Using Infrared and Vision Sensors

Abstract

The purpose of this study is to develop a robotic system that is able to follow a particular person in a real-world environment without losing track due to occlusions by objects or other people. It uses Microsoft's Kinect device, which combines infrared imaging with video imaging for robust recognition. The proposed system constructs skeleton images of every person in the frame and it performs pose-recognition based on the skeleton. A significant feature of the study is the introduction of a new histogram matching technique that adapts to changes in environmental light conditions. This, together with skeleton model matching improves the performance of recognition. The second important aspect of the study is the development of software for the robot that allows the cameras to stay focused on the person of interest. The effort also encompasses research techniques that allow the robot to maintain a relatively constant distance from the person.

Thesis Committee

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