Session: TA1-A

Neuro-based Recognition and Control for Alife(OS)

Research on an Alife robot
Masanori Sugisaka, Wang Jiwu

For a mobile robot, it is difficult to realize long distance navigation reliably because of the slipper, the errors of the sensors, etc. In view of above problems, we explored an Alife robot used for the service such as in hospitals and home. In this robot, we have developed the vision system, the voice system, the tele-control system and the low level control system. By integrating those systems, the robot can realize reliable long distance navigation not only in experiment environment but also in some practical environments. In this paper, we explained each system and their cooperation method.

Image Energy Pilot, FA Soil-Salt Recognition Approach
Xin Wang, Masanori Sugisaka, Wenli Xu

Objectives are mixed in an image, their different textures and gray values are bring about gradients changes. These changes have shown as clues to the problem in industrial inspection. We propose an approach for image classification and recognition. A traditional rank-value median filter is implemented in pre-process. We utilizing an auto-relation function on image energy to construct a piloting set, which includes possible elements, to classify objectives from coarse to fine. Further researches on this approach are still going and will be reported recently.

Session: TA1-B

Hyper Performance Robotics and Mechatronics

Tongue Robot using Tendon Driven Mechanism

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This paper describes the development of a multi-DOF (degrees of freedom) flexible robot based on the tongue. The authors focused on the tongue because of its "flexibility" and "soft motion." Motion of this robot is realized mechanically, and flexibility is achieved by covering the mechanism with a flexible structure. This robot consists of three parts: the tip, the body, and the base. In future, it will be applied in medical fields, e.g., for assistance in dysphonia, or in industrial fields, etc.