Next Generation Robotics

Humanoid Robot

Executive summary

Introduction

A humanoid robot is defined as a robot with an overall appearance based on that of human body. Compared to other mobile robots, humanoid robots have advantages in technical and psychological level. First, humanoid robots are more flexible and adaptive to work in human's living and working environment. Second, since the humanoid robot has a human mimicking design about the appearance and behavior, it is easy to satisfy humans' emotional appeal. For these reasons, humanoid robot has a huge market potential, especially in the areas of ageing populations' service, prosthetics, and exploration in complex working environment, experiment, and home entertainment. However, at this moment, the market size of humanoid robots is small and they are not ready yet for general use. Therefore, how to improve this technology for obtaining widespread use has been a widespread concern.

Purpose

The aim of this project is to analyze existing and potential problems of humanoid robots from designing to behavior execution, from application to future demands, as well as from ethical aspects. Hence, we write this executive summary to provide recommendations to next generation robots' designing, manufacturing, development, application and marketing.

Results

In our project, we talk about the history, from early stage to modern age, to give a general idea of how humanoid robots are developed. It could benefit in both technique and psychology. Since they can be used in many fields including service, medicine, exploration, education and entertainment, humanoid robots of course attract many attentions. Based on the common robots, the thinking system, expression system, and movement system are

added to make it come true. Although it is not perfect, humanoid robots are now used in industry, rescue and many other fields to do something danger or humans cannot do, which have created great value for society.

Discussion/Conclusions

In conclusion, after discussing and researching humanoid robots' technology relevant and application, we found that they have so many advantages in various areas, which is far more important to the society.

However, there are still some limitations in this technology, which need to be discussed and studied in the future. For example, this kind of robots also cause ethical problems and economic problems. Some insist that they would affect normal humans' behavior and hidden danger exists. To address this problem, further actions need to focus on making some laws about humanoid based on these issues and considering how to control and mange humanoid robot so that the impacts of unemployment rate could be minimized.

Recommendations

Based on the results of this study, several recommendations are made as follows:

i) humanoid robots could be used for those people who are the disable or the elderly to deal with daily matters, since it can help these people get away from aloneness, enhance people's happiness;

ii) Humanoid robots are used for training students' clinical skills, such as suturing, venipuncture and laparoscopic surgery for airway management;

iii) Humanoid robots could be designed and built for rescuing humans, such as in the cases of radiation, earthquake, volcano and fire disasters, which could effectively solve the problems that humans cannot get accesses to the cases that extremely harm people's health.