Internet Controlled Rescue Robot System Prototype

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RasBot is a low-cost and easy-to-use robot capable of streaming real time video with little to no delay to multiple users. It can both be controlled by a remote user who has the privilege to access the control system through our website, or auto-movement controlled by user’s end image processing software. The live streaming video can also be viewed on our control panel web page. The aim of this project is to design a user-affordable and easy-to-use device that can replace people going to places where potential danger lies. It can also be used in search and rescue missions of a disaster and in war field by soldier.

Hardware

The hardware used in RasBot:

I. Raspberry Pi (Model B)
II. Raspberry Pi Camera
III. N20 DC Geared Motor w Rubber Wheel (1500-10000RPM 6V)
IV. Long Range WiFi USB with Antenna (802.11N)
V. L298N Stepper Motor Driver Controller
VI. Portable Charger & NiMH Rechargeable Battery (9V)

System Architecture

Server
Internet
User Interface

Data Flow

Ubuntu Server (host in Canada)

Final Result

Low-cost & Easy-to-use:

• Real time streaming video can be viewed by anyone via web with minimum latency
• Once logged in, use arrow keys on keyboard for easy control
• Open interface for image processing - Laser Tracking (color tracking)

Further Work:

• Various image processing based on live streaming video
• Audio stream to pass voice message
• Faster motor for higher mobility

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