

**ROBOGUARD: A Research On The Integration of Wifi in Security Robots
Using PDA as Microcontroller.**

A Thesis

Presented to

The Faculty of the College of Computer Studies

Central Philippine University

**In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science in Computer Science**

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September 2007

ABSTRACT

Wifi was developed to be used for mobile computer devices, such as laptops and in Local Area Networks (LAN). The Roboguard was designed to integrate Wifi in robots and used PDA as the robot's microcontroller.

The study aimed to utilize the potentials of Wifi as a bridge between robots and computers. Using Personal Digital Assistant (PDA) as a robot microcontroller, it gives the robot good expansion capabilities and answers the hardware limitations. By designing a security prototype robot and with the integration of Wifi and PDA, the system can help the security guards in monitoring a certain assigned area.

The system was developed to monitor the surrounding area of a certain place. It primarily aids the security guards to rover the place using the security robot. The system contains a database wherein user information is being stored as well as password security options. The database system also provides restrictions and security from illegal usage. The system has the ability to display the video streamed by the camera installed in the robot and records those videos. It also features motion detection capability.

The Wifi (IEEE 802.11) technology was proven as an effective tool to bridge the communication between the prototype Roboguard and computer running in Windows XP operating system. The technology was also proven as an effective tool to control the Roboguard using Personal Digital Assistant (PDA) as microcontroller.