

CS Masters' Thesis Defense

Title: *An Intelligent Healthcare Data Management System for Mobile Environment*
Speaker: Avinash Vadi
Date: Monday, March 19, 2012
Time: 11:00 a.m.
Location: GMCS 555
Thesis advisor: Dr Mahmoud Tarokh

Abstract:

In a healthcare environment, we usually get the patient's health information when the patient is in an idle state. In order to get the patient's health information while performing his daily tasks, we need a ubiquitous device. The goal of this thesis is to design an "Intelligent Healthcare Data Management System (IHDMS)" for mobile environments that will handle the healthcare data of the patient and also converts it into a globally used standard for exchange of healthcare data and information. The IHDMS developed in this thesis has an intelligent algorithm that can find an optimal solution within an acceptable time, and is faster and more dynamic than other algorithms in assigning tasks. It processes and transmits sensor data (pulse rate, blood pressure, etc.) in a way that minimizes the system end-to-end delay, while guaranteeing required system battery lifetime and availability of the mobile device. The device battery lifetime is potentially increased by more than 200%, the memory usage is less than 100 KB and it processes all data by utilizing very few resources. In addition, the system also reduces the time latency in transferring the data and also server load on the healthcare center side by transferring data in a certain format through a secured channel. The IHDMS on a ubiquitous device is dynamic, efficient, fast and secure, and reduces load on end systems. It addresses most needs of the modern day ubiquitous devices in managing the patient's healthcare data.