

CIS research seminar series presents:

Parallel and Distributing Computing Experience on Low Cost Single Board Computer (SBC) Based Micro-cluster

By:

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Abstract

Parallel processing is a form of computing in which number of activities are carried out concurrently on multiple machines so that the time required to solve a given problem is reduced. Several interesting programming models have been developed for parallel computing applications such as OpenMP for shared memory programming or multicore machines and MPI (Message Passing Interface) for distributed memory network of workstations.

For decades, researchers have been using high-performance Personal Computers (PC) and open source LINUX operating system-based clusters for parallel computing experiments using MPI. Recently the phenomenal popularity of low cost and power efficient single board multicore computers like the Raspberry Pi has caused the emergence of the single board computer based Micro Clusters. Micro-clusters have greater scalability, power efficiency and short development time. In this talk, our experience of developing a five node Raspberry Pi based Micro cluster will be presented along with simple examples of MPI applications implemented on the cluster.

Biography

Dr. Syed Misbahuddin received BE degree in Electronics from NED University of Engineering and Technology Karachi Pakistan, MS in Electrical Engineering from King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia and Doctor of Engineering in Electrical Engineering from the University of Detroit Mercy.

Dr. Misbahuddin has contributed several research publications in international journals and conference proceedings. His research interests are in embedded systems, parallel and distributed computing and data reduction algorithms.

Currently Dr. Syed Misbahuddin is working as Professor in Department of Electrical Engineering College of Engineering and Islamic Architecture Umm Al-Qura University, Makkah, Saudi Arabia.