Fall *2018*

Parallel & Distributed Programming

CSCI-B 424, CSCI-B 524, INFO-I 400

Instructor: Vrajitoru, Dana (dvrajito@iu.edu)

Prereq: CSCI-C 243 or CSCI-A 594 or INFO-I 308, MATH-M 301   **When:** Monday & Wednesday, 5:30-6:45p

Course Description: Overview of parallel computers, shared memory, message passing, MIMD and SIMD classifications. Understanding and use of message passing and synchronization facilities such as MPI. Study of parallel programming models such as master-slave, client-server, task-farming, divide-and-conquer and pipelining. Performance analysis of parallel systems, execution time, time complexity, load balancing and scalability.

Learning Objectives:

◊ Know the difference between shared-memory and distributed parallel systems.

◊ Be able to develop and apply knowledge of parallel and distributed computing techniques and methodologies.

◊ Gain experience in the design, development, and performance analysis of parallel and distributed applications,

◊ Be able to identify and use proper programming models to solve common problems in a parallel or distributed system.