

Mohammad Mobeen Ludin

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EDUCATION

- **Earlham College** Richmond, IN
Bachelor of Arts, Major: Computer Science; Minor: Business and Non-Profit Management Dec. 2012
 - Relevant courses: Networks and Networking, Computer Architecture, Modern Database Management Systems, Algorithms and Data Structures, Theory of Computation, and Modern Operating Systems
 - Relevant student research: Parallel Programming, Software Engineering, High Performance Computing, Swarm Robotics Simulation, Ford/Knight Research in Scientific Data Visualization, and Social Networking
- **United World College Of American West** Montezuma, NM
International Baccalaureate (IB) Diploma 2006-2008

PROFESSIONAL EXPERIENCE

- **HPC Instructor, Programmer & System Administrator** Durham, NC
Shodor Education Foundation and the National Computational Science Institute Jan 2013 - Present
 - Manage Shodor's server infrastructure, including high availability virtualization layer, cluster management layer, storage layer, & backup system
 - Develop the software (C/MPI) and back-end scripts (Perl) for the BCCD operating system clustering (networking, storage, software packages, etc.)
 - Develop and deliver curriculum materials for multi-day workshops for teaching parallel programming concepts & STEM concepts through Robotics
 - Lead instructor for NCSI & XSEDE13 Workshops on Parallel Programming and Supercomputing
- **LittleFe & BCCD Project Engineer (littlefe.net & bccd.net)** Richmond, IN & Durham, NC
Earlham College & Shodor Education Foundation, Inc Jan. 2011 - Present
 - Helped design a complete 6 node portable computational cluster
 - Manage buildout workshops sponsored by Intel, National Science Foundation (NSF), Association for Computing Machinery (ACM), and SC Conferences
 - Lead developer for the BCCD operating system designed to allow any group of networked computers to temporarily become an impromptu cluster for scientific computing and HPC education
 - Recent duties: UI Manager, Release Engineer, testing bug fixes/features for quality assurance, updating documentation, and providing technical support for BCCD users
- **System Administrator & Senior Pedagogical Tools Developer** Richmond, IN
Earlham College Computer Science Department Aug 2009 - Dec 2012
 - Maintained a server-workstation environment composed of GNU/Linux, BSD, and associated software
 - Researched, installed, and maintained a variety of services like DNS, DHCP, Server Virtualization, etc.
 - Developed and maintained programming tools, remote connect software, software libraries, and other software systems the department uses in teaching programming
 - Wrote tutorials for using remote connect, GDB debugger, CMU-Graphic library, emacs, and other programming tools
- **Research Internship: Petascale Software Engineer** University of Illinois, Champaign, IL
BlueWaters Petascale Computing Facility May 2011 - June 2012
 - Integrated and developed PetaKit benchmarking tools into curriculum modules for BCCD/BlueWaters - http://www.shodor.org/petascale/materials/UPModules/PetaKit_BCCD/
 - Developed software with capabilities of shared memory, distributed memory, GPGPU parallelism and ability to teach key concepts such as speedup, efficiency and load balancing

WORKSHOPS AND PRESENTATIONS

• Facilitator and Assistant Instructor

- *National Computational Science Institute (NCSI)* 2011 - 2012
 - NCSI workshops on Introduction to Parallel Programming and Cluster Computing, 2011-2012
 - NCSI workshops on Intermediate Parallel Programming and Cluster Computing, 2011-2012
 - Facilitated and taught HPC education summer workshops for Minority Engineering Advancement Program (MEAP) in Indianapolis, 2011-2012

• Research Presentations

- *LittleFe/BCCD - The HPC Educational Appliance*
 - Cluster13 IEEE Conference 2013
 - TeraGrid/XSEDE Conference 2011-2013
 - Supercomputing Conference 2011-2013
 - SIGCSE Conference 2012
 - Earlham College Annual Research Conference 2011-2012

TECHNICAL SKILLS

Languages can translate to/from: English, Pashtu, Persian, Urdu, Hindi

Computer Languages: C/C++, MPI, OpenMP, bash, SQL, Python

Some experience: Java, Pthreads, JavaScript, HTML5, Perl, CUDA, Fortran, Assembly

Computer Hardware: Troubleshooting, replacing parts, design & implementation of cluster infrastructure

Operating Systems: Linux Debian, CentOS; UNIX MacOS X, FreeBSD; Windows XP/VISTA/7

Applications: OpenStack, oVirt, Emacs, Vim/Vi, Virtualization(KVM, Xen, VirtualBox), Xming, Source Code Control (CVS and SVN), PBS, MS Office

Lab Skills: Logic board soldering, Microscope, DNA/RNA sequencing, Function Generators

ACTIVITIES

• Business Manager

- *Earlham College Newspaper (The Earlham Word)* Richmond, IN
Aug. 2011 - May. 2012
 - Administered employee payrolls and advertisements
 - Managed contracts with publishers and subscribers

• Secretary of Finance

- *Earlham College Student Government and Senate* Richmond, IN
Jan. 2010 - Dec. 2010
 - Monitored Students Activity funds. Allocated funding to student clubs/organizations or activities
 - Trained business managers of student clubs/organizations. Wrote user manuals for business managers.

AWARDS

Cluster13 Conference Best Grad/PhD Student Poster Award	2013
Earlham College International Student Scholarship	2008-2012
Davis United World Colleges Scholarship	2008-2012
Blue Waters Undergraduate Petascale Research Internship	2011
SC Conference - Undergraduate Computational Engineering and Science Award	2011
Watson UWC Scholarship	2006-2008