

# 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

- **Parallel Computing Education Specialist & Sysadmin** 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, & Google Apps
  - Develop and deliver curriculum materials for multi-day workshops for teaching parallel & high performance computing at pre-college & college level
  - Lead instructor for NCSI & XSEDE13 workshops on parallel computing & supercomputing
  - Lead instructor for Blue Waters Petascale Institute at National Center for Supercomputing Applications (NCSA)
- **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 Linux 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
- **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

**Computer Languages/Implementation:** Expertise: C, C++, MPI, OpenMP, bash  
Some experience: OpenACC, CUDA, Pthreads, Python, SQL, JavaScript, HTML5, R

**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, Virtualization(KVM, Xen, VirtualBox), Visualization(Visit, Paraview, GNUplot), Xming, Source Code Controls (CVS and SVN, Git), Project Management (Trac, Redmine, Jenkins) MS Office

## 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 Scholar	2008-2012
Blue Waters Undergraduate Petascale Research Internship	2011
SC Conference - Undergraduate Computational Engineering and Science Award	2011
Watson United World College Scholar	2006-2008