Laxman S. Nathawat

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Education

May 2020	University of Tennessee, Knoxville, TN Master of Science, Computer Science (Cyberinfrastructure)
July 2002	Mississippi State University, Starkville, MS Graduate Certificate in Software Engineering
May 2002	Mississippi State University, Starkville, MS Master of Science, Computer Science
May 1996	National Institute of Technology, Warangal, India Bachelor of Technology (B.Tech.)

Research Interests

- Cyberinfrastructure security
- Adversarial machine learning
- Application of machine learning to analyze, clean, and validate data
- Cloud computing

Industry Certifications and Recognitions

- CompTIA Security+ (SY0-501) certification
- Cisco Certified Network Associate (CCNA) certification
- CompTIA Linux+ certification
- CompTIA Network+ certification
- Served as a Subject Matter Expert (SME) for the CompTIA Linux+ certification
- Red Hat Certified Technician (RHCT) certification
- Sun Certified Java Programmer certification
- CIW Associate certification
- PSCC Online Instructor Training – Levels 1 and 2
- Amazon AWS Certified Cloud Practitioner certification
- Amazon AWS Cybersecurity Specialist training
- Amazon AWS Cloud Application Architect/Developer training
- Amazon AWS Software Development Engineer training.

Technical Skills

Operating Systems:	Android, Linux (Red Hat Enterprise Linux, Fedora, Ubuntu, Kali), Windows.
Programming:	Python, Java, C++, C, Assembly, JavaScript, Bash, Perl, PowerShell, HTML, XML, YAML, MATLAB, NetBeans IDE, Eclipse IDE, Microsoft Visual Studio, Visual Studio Code, PyCharm, Spyder, Google Android Studio.
Agile/DevOps:	CI/CD, GitLab, GitHub, Slack, Trello, Teams, Docker.
Networking:	TCP/IP, IPv6, OSPF, EIGRP, RIP, STP, VTP, PPP, ACLs, NAT, PAT, SDN, POSIX threads, Sun ONC RPC, Cisco IOS, Cisco routers and switches, Cisco Packet Tracer.

Security:	Wireshark, Nmap, Kali Linux, Metasploit, LAN and wireless network security, mobile & embedded devices security, OWASP.
Cluster Computing:	Hadoop, MapReduce, NPACI Rocks, OSCAR, MPI, OpenPBS, Ganglia, and PGI Cluster Development Kit.
Cloud Computing:	Amazon Web Services (AWS).
Databases:	SQLite, SQL, MS Access, MySQL, Oracle 10g, MariaDB, DbVisualizer.
Virtualization:	VMWare, Oracle VirtualBox, Microsoft Hyper-V.

Professional Experience

Environmental Informatics Software Engineer   **4/20 – present**
Oak Ridge National Laboratory, Oak Ridge, TN

Tools: Java, Python, Perl, JavaScript, PHP, HTML, Drupal CMS, bash, PowerShell, YAML, VS Code, Spyder, PyCharm, NetBeans, MySQL, MariaDB, DbVisualizer, docker containers, CI/CD, GitLab, Slack, and Teams.

- Write software to automate and improve data ingestion, curation, quality assurance, and documentation workflow.
- Help improve software documentation practices.
- Enhanced QA copy code to properly handle previous versions of published datasets.
- Fixed SQL-injection security vulnerabilities for the MsTMIP and MsTMIP-v2 projects.

Associate Professor, Computer Science   **8/08 – 1/20**
Pellissippi State Community College, Knoxville, TN

- Implemented an interdisciplinary simulations project for introductory chemistry courses. The project won the Pellissippi State **Innovations Award**.
- Proposed, developed, and taught a mobile computing course for the Programming concentration.
- Developed Android apps on a variety of topics.
- Developed five courses as a lead instructor for the Data Communications and Networking concentration.
- Developed specifications and network designs to setup the Cisco Routing and Switching Laboratory.
- Helped the BCT Department get the ACBSP accreditation.
- Collected and summarized data on internship feedback forms, homeschooling, and new student orientations for the ACBSP report.
- Helped in recruitment, classroom observation, and orientation of the adjunct faculty.
- Served as an academic advisor for students from programming, networking, and system admin concentrations.
- Served as a lead instructor and program representative to coordinate Dual Enrollment with the local high schools.
- Represented the BCT Department in the Open House sessions and the New Student Orientation sessions.

- Received the Pellissippi State **Excellence in Teaching Award** for developing innovative teaching techniques and hands-on course material for the programming and Linux operating system courses.

Ph.D. student, Imaging, Signals, and Machine Learning group   **5/14 – 6/17**
Oak Ridge National Laboratory, Oak Ridge, TN

- Conducted experiments to calibrate light field cameras and microlens arrays.
- Developed software to capture, process, and store 4D light fields.
- Developed software to control and interface with the light-field camera hardware.
- Worked on the development of prototypes for light field cameras.
- Participated in the Higher Education Research Experience (**HERE**) program.

Assistant Professor, Computer Science   **8/05 – 7/08**
Pellissippi State Community College, Knoxville, TN

- Proposed and developed Java programming track for the Programming concentration. Developed and taught introductory to enterprise-level Java programming courses as a lead instructor. Introduced NetBeans and Eclipse Integrated Development Environments (IDEs), setup the server-side programming lab environment, and obtained the Sun Certified Java Programmer certification.
- Started community-focused projects for the Enterprise Java programming course. Students developed software for local non-profit organizations or small businesses as part of their semester project.
- Proposed and established the Linux System Administration Certification track for the CSIT program. Developed and taught 6 Linux courses as a lead instructor and setup the hands-on laboratory environment.
- Worked with the National Center of Excellence for High Performance Computing Technology to develop national certification for the high performance computing technology. Attended meetings and contributed questions for the certification question bank.

Instructor, High Performance Computing (HPC)   **8/02 – 7/05**
Pellissippi State Community College, Knoxville, TN

- Developed the cluster computing infrastructure for the NSF funded the National Center of Excellence for HPC Technology.
- Managed software repository of HPC tools, libraries, and benchmarks.
- Configured the Mobile Laptop Cluster for the HPC technology demos.
- Helped organize the Third Annual National Conference for High Performance Computing at Pellissippi State.
- Helped in the development of the HPC curriculum and program.
- Served on the HPC Program Development Committee.
- Worked with the HPC Department head and the Dean's Office to get the Tennessee Board of Regents (TBR) approval for the HPC curriculum.
- Attended departmental, college, and NSF grant meetings.
- Collaborated with the Oak Ridge National Laboratory (ORNL) to create internship opportunities for HPC graduates.
- Visited local high schools, colleges, and businesses to promote HPC technology.
- Conducted seminars and workshops to provide training on HPC technology.

- Received the **Gene Joyce Visionary Award** for making positive difference in the community through leadership and the establishment of the cluster computing environment for the National Center of Excellence for High Performance Computing Technology.

Graduate Research Assistant, USDA-ARS 6/00 – 8/02
Mississippi State University, Starkville, MS

- Performed 3-D and spatial analysis and worked on surface creation, analysis, and visualization tasks for GIS applications.
- Developed GIS data processing, management, and integration tools using Java, C++, and Avenue Scripts.

Member Technical Staff, HPCC division 5/97 – 12/99
Centre for Development of Advanced Computing, Pune, India

- Worked as a team member for the development of PARAM 10000 supercomputers.
- Worked on turnkey projects involving PARAM supercomputers, parallel applications, and high-speed networks.
- Developed requirement specifications and designs for LANs using 3COM, Lucent, Cisco, Fore Systems, C-DAC, and Sun Microsystems networking hardware and software.
- Assisted in writing, modifying and maintaining technical documentation and specifications.

Selected Presentations, Tutorials, and Workshops

- Laxman Nathawat. Breakout session on "Mobile Application Development for Android Devices". NISOD's 35th annual International Conference on Teaching and Leadership Excellence, Austin, TX, May 26 – 29, 2013.
- Laxman Nathawat. Presentation on "Using Cluster Distributions to Design and Build High Performance Computing Linux Clusters". High Performance Computing 3rd Annual National Conference, Knoxville, TN, May 23 – 25, 2005.
- Laxman Nathawat. Tutorial on "Tools and Techniques for Building High Performance Linux Clusters". Third Annual Mid-South College Computing Conference, Oxford, MS, April 1 -2, 2005.
- Laxman Nathawat. Workshop on "Building PC Clusters". ACM Mid-Southeast Conference, Gatlinburg, TN, November 11-12, 2004.
- Laxman Nathawat. Presentation on "Introduction to Cluster Distributions". High Performance Computing Technology 2nd Annual National Conference, San Francisco, CA, June 09, 2004.
- Laxman Nathawat. Presentation on "Technical Description of PC Clusters". High Performance Computing Workshop at Pellissippi State Technical Community College, Knoxville, TN, September 26, 2003.
- Laxman Nathawat. Presentation on "Cluster Building: Performance, Scalability and Cost issues in a Community College Environment". High Performance Computing Technology 1st National Conference, Raleigh, NC, June 13, 2003.
- Laxman Nathawat. Presentation on "Introduction to NPACI Rocks Cluster Distribution". High Performance Computing Technology 1st National Conference, Raleigh, NC, June 13, 2003.

- Laxman Nathawat. Workshop on "Installation and Configuration of NPACI Rocks Cluster Distribution". High Performance Computing Technology 1st National Conference, Raleigh, NC, June 13, 2003.
- Willers, J. L., Nathawat, L. S., English, P. J., Freeland, T. B., Jenkins, J., Steil, J. R., & Mulrooney, J. E. (2003). Integration of Spatial Information from Spray Planes with Elevation Data and Imagery for Use in Cotton Insect Control. *Journal of Economic Entomology*.

Professional Activities

- Program representative and lead instructor to coordinate Dual Enrollment with the local high schools.
- Department representative for the General Technology program to meet with the Tennessee Board of Regents (TBR) Academic Audit team.
- Program representative and report contributor to help get the ACBSP accreditation for the BCT Department.
- Technical paper referee for the 4th Annual Mid-South College Computing Conference.
- Member, Conference Planning Committee for the 3rd National Conference for High Performance Computing, held at Pellissippi State Community College, Knoxville, TN.
- Session moderator for the "Building HPC Resources" track during the 3rd National Conference for High Performance Computing, held at Pellissippi State Community College, Knoxville, TN.
- Technical contributor for the development of the national certification for high performance computing professionals.
- Panel member for the HPC National DACUM Committee to help develop a national common core curriculum for HPC degree programs.

Academic Committees

- Member, Faculty Search Committee for the Programming concentration
- Member, Faculty Search Committee for the Networking concentration
- Member, Faculty Search Committee for the Cyber Defense concentration
- Member, Faculty Search Committee
- Member, Faculty Development Committee
- Member, International Education Committee
- Member, Access and Diversity Committee
- Member, Campus Culture Dimensions Committee
- Member, Student Support Committee
- Member, HPC Program Committee
- Member, HPC Curriculum Development Committee

Honors and Awards

- LDRD Seed Money Project Award for the plenoptic imaging research at Oak Ridge National Laboratory (ORNL), FY2015.
- John and Suanne Roueche Excellence Award, 2015.
- Pellissippi State Innovations Award, 2014.
- NISOD (National Institute of Staff and Organizational Development) Teaching Excellence Award, 2011.

- Pellissippi State Excellence in Teaching Award, 2010.
- Pellissippi State Gene Joyce Visionary Award, 2004.
- Certificate of Appreciation by the Naval Oceanographic Office, Stennis Space Center, MS.
- Alumni Association Gold Medal, National Institute of Technology, Warangal.
- College Merit Scholarship
- National Merit Scholarship.

Courses Developed/Taught

High Performance Computing (HPC)
- HPC 1020: HPC Internetworking & Grid Technology
- CSIT 1360: Introduction to Cluster Computing*
- HPC 2020: Advanced HPC Internetworking & Grid Technology
- CSIT 2320: Advanced Cluster Computing*
- CSIT 2330: Cluster System Management & Monitoring*
- CSIT 2340: Advanced HPC Applications Architecture*
- HPC 2300: HPC Architecture & System Administration*
- HPC 2400: Introduction to Parallel Programming*
- HPC 2500: MPI Programming*
- HPC 2600: High Performance and Distributed Computing*

Programming
- CITC 1110: Programming I Lab*
- CITC 1310: Programming I*
- CSIT 1510: Introduction to Programming Using Java*
- CSIT 1520: Advanced Java Programming*
- CSIT 1810: Introduction to Database Design
- CSIT 2250: Mobile Application Development*
- CSIT 2260: Special Topics in IT*
- CITC 2314: Java Programming III*
- CSIT 2425: SQL Applications with Oracle
- CSIT 2430: Introduction to Scripting Languages
- CSIT 2650: Java Programming*
- CSIT 2655: Enterprise Java Programming*
- CSIT 2820: Machine Organization

Cyber Defense and Networking
- CITC 1102: Networking Lab*
- CITC 1302: Introduction to Networking*
- CITC 1330: Microsoft Desktop OS
- CSIT 1710: A+ Computer Hardware
- CSIT 1720: A+ Computer Software
- CSIT 1730: Networking Fundamentals*
- CITC 2329: Routing and Switching I*
- CITC 2330: Routing and Switching II*
- CSIT 2750: Routing/Switching Configuration*
- CSIT 2760: Advanced Routing/Switching Configuration*

Linux System Administration
- CITC 1333: Linux LPIC-I*

- CSIT 2410: Introduction to Linux*
- CSIT 2411: Linux System Administration*
- CSIT 2412: Linux Certification Exam Preparation*
- CSIT 2461: Linux/Unix Systems & Administration*
- CSIT 2475: Linux Advanced System & Network Administration*
- CSIT 2476: Linux System Security Administration*
- CSIT 2477: Advanced Linux Certification Exam Preparation*

* Lead Instructor