

Rohit Pathak



Date of Birth: 16-Nov-1987
Place of Birth: Indore, India
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Objective

Computer Science Research position utilizing solid training and research experience in High Performance Computing, Scientific Computation, Simulation & Modeling, Computational Nanotechnology and Parallel/Distributed Application Development. I believe that I possess the motivation, intellectual ability and preparation to set out on this path and to make significant original contributions to the on-going research work and find some practical and applicable solutions.

Proficiencies

General

- Resourceful, energetic, competent, multi-tasking and result-oriented.
- Work well as a team member or independently.
- Use clear, concise communication skills in conjunction with organizational skills to perform daily duties.

Computer

- Set up an operating system Windows / Linux on workstation. Setup of HPC Cluster
- Programming in field of HPC & Graphics. Demonstrated strong skills in object-oriented programming and the use of abstract data types
- Ensure readability, presentation, and reusability of code with clear, concise comments
- Successfully manage sensitive project data relied on to ensure safety, security, and transfer of current, accurate information where human lives are at stake

Programming

- Research work done in HPC using Clusters & GPU
- Programming applications for HPC setups
- Research work done in SMC (Secure Multi-Party Computation)
- Graphics application programming

Educational Profile

B.E. in Computer Science Engineering (4 years Program) 2006 - 2010
Aggregate – 71.5% (First Class) from Acropolis Institute of Technology & Research, Indore, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, M.P., India

12th Grade 2004 - 2005
65% from Shri Gujarati Samaj AMNEM School (Central Board of Secondary Education), Indore, M.P., India

10th Grade 2002 - 2003
79% from Agrawal Public School (Central Board of Secondary Education), Indore, M.P., India

Test of English as Foreign Language (TOEFL) 5-Dec-2009
98 (Total) – 24 (Listening), 22 (Reading), 24 (Speaking), 28 (Writing)

Graduate Record Examination (GRE) 29-Oct-2009
1110 (Total) – 800 (Quantitative), 310 (Verbal)

Language Proficiency

- Russian (average)
- Spanish (basic)
- Chinese (basic)

Application Programming Experience

- Simulation and Modeling using HPC/Distributed Computing
- 3D Graphics application programming using OpenGL and XNA
- HPC programming using CUDA, MPI.NET, MATLAB
- Parallel programming using MPI, PVM and threads for Scientific Computation
- Artificial Intelligence in Game Programming
- Simulation MEMS & Nano devices and phenomenon using HPC
- Modeling of RFID devices (Tags and Antenna)
- Worked on advanced techniques for Texture Compression
- Websites Developed – www.nanotechbiz.org, www.journals.acropolis.in
- Project on Hospital Management Software

Skills Summary

Operating Systems: Windows and LINUX

Languages: Assembly (AT&T Syntax), C, C++ , C#, F#, Java, PHP, MATLAB, Perl, Python and Ruby

HPC: High Performance Computing (HPC) / Distributive Computing / Parallel Programming using MPI, PVM and MATLAB

Graphics Programming: OpenGL, XNA, OpenGL Shading Language (GLSL), High Level Shading Language (HLSL) & CG

GPU Programming: CUDA (Compute Unified Device Architecture)
Assembly Programming of Pentium compatible processors

Web Development: Java Applets, PHP

Software & IDE: Microsoft Visual Studio 2005 & 2008, Microsoft XNA Game Studio, Microsoft Office, Netbeans IDE, MATLAB and Adobe Photoshop

Publications Details

List also Available through: - <http://www.nanotechbiz.org/publications.php>

- Modeling Energy & Reliability of a CNT based WSN on an HPC Setup. In: Sensors & Transducers Journal (ISSN 1726-5479) (In Press)
- Reliability Modeling of MEMS Devices For Applications. In: The World Journal of Modelling and Simulation (ISSN: 1746-7233) (In Press)
- Reliability modeling of nano-RFID systems . In: Forschung im Ingenieurwesen, Springer Berlin / Heidelberg (In Press). Available through:- SpringerLink
- Modeling of MEMS based Fuel Cell using SUGAR and Reliability Calculations . In: IEEE Systems Journal (In Press). Available through:- IEEE Xplore
- Developing Reliability Model of MEMS Devices based on Environmental Parameter . In: IEEE/ASME Journal of Microelectromechanical Systems (Accepted, Major Revision). Available through:- IEEE Xplore
- Nanotechnology and MEMS enabled Modeling of Elements in HDD System with Reliability Modeling . In: Journal of Qafqaz University. Available through:- Russian Periodicals Catalog, ICAAP, JournalSeek
- Modeling and Reliability Analysis of CNT and MEMS based Wireless Sensor Network . In: International Journal of Academic Research. Available through:- IJAR Online Database
- Multi-scale Modeling for Nano Scale Phenomenon Using CUDA Based Framework . In: International Conference on Advances in Computing, Control, and Telecommunication Technologies - ACT 2009. December 2009. DOI: 10.1109/ACT.2009.223 Available through:- IEEE Xplore

- Multi-Scale Modeling of Nano enabled Solar Cell . In: International Conference on Issues & Challenges in Energy Conversion & Management - ICEM 2009. December 2009.
- Intricate Modeling aspects of MEMS based Fuel Cells . In: International Conference on Issues & Challenges in Energy Conversion & Management - ICEM 2009. December 2009.
- Implementation of Virtual Reality Based Nano Domain Simulation an HPC Setup . In: International Conference on Electronic Design and Signal Processing - ICEDSP 2009. December 2009. Available through:- IEEE Xplore
- Wireless Sensor Network: Modeling and Analysis of MEMS based Nano-Nodes . In: Sensors & Transducers Journal, Vol. 110, Issue 11, November 2009, pp. 120-130 Available through:- Chemical Abstracts
- Implementation of virtual reality and agents model based nano domain simulation an HPC setup . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340270 Available through:- IEEE Xplore
- Reliability modeling of MEMS devices on CUDA based HPC setup . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340289 Available through:- IEEE Xplore
- Recent trends in RFID and a java based software framework for its integration in mobile phones . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340296 Available through:- IEEE Xplore
- Analysis of security issues in SMC based RFID in supply chain management with energy modeling . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340298 Available through:- IEEE Xplore
- Energy modeling in carbon nano tube based wireless sensor networks . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340294 Available through:- IEEE Xplore
- Modeling and analysis of DC traction system under light of current developments in HPC and virtual reality . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340315 Available through:- IEEE Xplore
- Multi-scale modeling of nano scale phenomenon using CUDA based HPC setup . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340321 Available through:- IEEE Xplore
- SMC protocol for privacy preserving in banking computations along with security analysis . In: Proceedings of The First South Central Asian Himalayas Regional IEEE/IFIP International Conference on INTERNET AH - ICI 2009. November 2009. DOI: 10.1109/AHICI.2009.5340328 Available through:- IEEE Xplore
- Modeling and Analysis of DC Traction System in Light of Recent Innovations from HPC and Virtual Reality . In: International Conference on Advances in Recent Technologies in Communication and Computing, ARTCom 2009. October 2009. DOI: 10.1109/ARTCom.2009.229 Available through:- IEEE Xplore
- Security Analysis of Secure Multi-Party Computation using Virtual Parties for Computation on Encrypted Data along with Performance . In: Proceedings of 2009 International Symposium on Computing, Communication, and Control (ISCCC 2009). August 2009. Available through:- ISI Proceedings
- Multi-Scale Modeling And Analysis Of Nano-RFID Systems On HPC Setup . In: Proceedings of International Conference on Contemporary Computing, IC3, JIIT University, Noida, Published by Springer in Communications in Computer and Information Science. August 2009. DOI:

10.1007/978-3-642-03547-0_61 Available through:- Springerlink, Scopus, Conference Proceedings Citation Index(CPCI formerly ISI Proceedings)

- Secured Communication For Business Process Outsourcing Using Optimized Arithmetic Cryptography Protocol Based On Virtual Parties . In: Proceedings of International Conference on Contemporary Computing, IC3, JIIT University, Noida, Published by Springer in Communications in Computer and Information Science. August 2009. DOI: 10.1007/978-3-642-03547-0_20 Available through:- Springerlink, Scopus, Conference Proceedings Citation Index(CPCI formerly ISI Proceedings)
- Secure Multi-Party Computation Protocol For Defense Applications In Military Operations Using Virtual Cryptography . In: Proceedings of International Conference on Contemporary Computing, IC3, JIIT University, Noida, Published by Springer in Communications in Computer and Information Science. August 2009. DOI: 10.1007/978-3-642-03547-0_37 Available through:- Springerlink, Scopus, Conference Proceedings Citation Index(CPCI formerly ISI Proceedings)
- Optimizing Reliability Analysis of MemS Devices on an HPC Setup Using Multi-Scale Modeling . In: Proceedings of 2009 International Conference on Software Technology and Engineering (ICSTE 2009). July 2009. Available through:- World Scientific, Conference Proceedings Citation Index(CPCI formerly ISI Proceedings)
- Secure Multi-party Computation Protocol for Statistical Computation on Encrypted Data . In: Proceedings of 2009 International Conference on Software Technology and Engineering (ICSTE 2009). July 2009. Available through:- World Scientific, Conference Proceedings Citation Index(CPCI formerly ISI Proceedings)
- Reliability Modeling and Optimization of MEMS Elements in Various Devices Using Multi-Scale Concepts. In: Proceedings of Conference on Innovative Technologies in Intelligent System & Industrial Application 2009 (Citisia'09). July 2009. DOI: 10.1109/CITISIA.2009.5224187 Available through:- IEEE Xplore
- Multi Scale Modeling and Intricate Study of MEMS Based Elements in RFID systems. In: Proceedings of Conference on Innovative Technologies in Intelligent System & Industrial Application 2009 (Citisia'09). July 2009. DOI: 10.1109/CITISIA.2009.5224196 Available through:- IEEE Xplore
- Modeling Nano Enabled Elements of Solar and Fuel Cell. In: Proceedings of Conference on Innovative Technologies in Intelligent System & Industrial Application 2009 (Citisia'09). July 2009. DOI: 10.1109/CITISIA.2009.5224198 Available through:- IEEE Xplore
- Intricate Modeling of HDD and Reliability Analysis in Light of Advances in Nanotechnology and MEMS. In: Proceedings of Conference on Innovative Technologies in Intelligent System & Industrial Application 2009 (Citisia'09). July 2009. DOI: 10.1109/CITISIA.2009.5224197 Available through:- IEEE Xplore <http://ieeexplore.ieee.org/xpl/RecentCon.jsp?punumber=5210013>
- Implementation of Parallelization and Nano Simulation using Multi-Scale Modeling on various HPC setups. In: Proceedings of Conference on Innovative Technologies in Intelligent System & Industrial Application 2009 (Citisia'09). July 2009. DOI: 10.1109/CITISIA.2009.5224204 Available through:- IEEE Xplore
- Wireless Sensor Network: Intricate Modeling and Analysis of CNT and MEMS based Sensor Nodes . In: Proceedings of 2nd International Workshop on Electron Devices and Semiconductor Technology (IEDST 2009). June 2009. DOI: 10.1109/EDST.2009.5166129 Available through:- IEEE Xplore
- Secure Multi Party Computation using Virtual Parties for Computation on Encrypted Data. In: Proceedings of The First International workshop on Mobile & Wireless Networks (MoWiN 2009) in conjunction with The 3rd International Conference on Information Security and Assurance. June 2009. DOI: 10.1007/978-3-642-02617-1_42 Available through:- Springerlink, Scopus, Conference Proceedings Citation Index(CPCI formerly ISI Proceedings)
- RFID: Recent prospectus and commercial applications . In: Proceedings of International Conference On Security and Identity Management (SIM) - 2009. May 2009.

- A Novel Protocol for Privacy Preserving Banking Computations using Arithmetic Cryptography . In: Proceedings of International Conference On Security and Identity Management (SIM) - 2009. May 2009.
- Optimizing HPC and Parallelization for Computation Nanotechnology in MCCA Environment . In: Proceedings of The 2009 6th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications, and Information Technology (ECTI-CON 2009). May 2009. DOI: 10.1109/ECTICON.2009.5137147 Available through:- IEEE Xplore
- MPI and PVM based HPC Setup for Multi Scale Modeling . In: Proceedings of IEEE International Advance Computing Conference (IACC 2010). March 2009.
- Distributive Computing for reliability analysis of MEMS devices using MATLAB . In: Proceedings of International Conference On Computing, Communication And Control 2009 (ICAC3-09). January 2009. DOI: 10.1145/1523103.1523155 Available through:- ACM Digital Library

Student Level Publications

- Advanced Techniques of Texture Compression. In: *Proceedings of Cognizance 2008*. Indian Institute of Technology-Roorkee, March 2008
- Micro Electro Opto-Mechanical Systems. In: *Proceedings of Kshitij - 2008*. Indian Institute of Technology - Kharagpur, February 2008
- Micro Electro Mechanical Systems. In: *Proceedings of Cognizance - 2008*. Indian Institute of Technology - Roorkee, March 2008

Research Grants

- Research grant by Microsoft for project proposal titled “Optimizing HPC and Parallelization for Nanotechnology”.

Associations

- Student Member - IEEE (Institute of Electrical & Electronics Engineering) Membership number: #90522518
- Member - Computer Society of India (CSI). India

Workshops and Seminars

- Open Source Workshop - Indian Institute of Technology. Chennai. Workshop on the latest happenings in the Open Source Community.
- Java Workshop - Indian Institute of Technology. Kharagpur. A workshop on Java.
- Seminar on Network Security - Ankit Fadia. AITR Indore. A seminar on Network Security by network expert Ankit Fadia.

Awards of Excellence

- Champion of Microsoft Compute Cluster Server (MCCA) High Performance Computing (HPC) Scholar vs Scholar Contest 2008 – Microsoft - INDIA.
- Great programming challenge - Reliance. Bhopal. Was ranked 21st all over India in National Level Computer Programming Contest.
- Winner of Brainvita - Shri Vaishnav Institute of Technology & Science. Indore, 2008. Won the first prize in a National Level Computer Programming Contest.
- Game programming contest - Indian Institute of Technology. Chennai. Was ranked 7th all over India in a in the Game Programming Contest.
- Business Plan contest - Indian Institute of Technology. Kharagpur. Was in the top 10 finalist in the Business Plan contest held at a National Level.

References

Prof. Dr. Durgesh Kumar Mishra, Senior Member IEEE,
Chairman IEEE Computer Society (Bombay Section), Vice-Chairman IEEE (MP-Subsection),
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