Umesh Bellur

CONTACT INFORMATION	Dept of Computer Science Indian Institute of Technology (IIT) Bombay Mumbai India	*Voice:* +919920480811 DBLP: http://dblp.uni-trier.de/pers/hd/b/Bellur:Umesh *E-mail:* umesh@cse.iitb.ac.in *WWW:* www.cse.iitb.ac.in/~umesh

INTERESTS

- Virtualization and Cloud computing - containers in virtualized cloud data centers, Server-less computing and warm start optimizations, Handling boot storms in data centers, energy aware provisioning, VM Migration, cloud simulation, SDNs and NFV in Cloud data centers. Derivative clouds using Container technologies.
- Distributed computing with applications to IoT and BlockChain.

EDUCATION

Ph.D. Syracuse University - June 1994, Syracuse, NY, USA.
Advisor: *Prof. Doug Lea* **Thesis -** *Clustering in Distributed Object Systems*

HONORS AND AWARDS

IIT Bombay IRCC Industrial Impact Award, 2010

MW4SOC 2010, Most Promising Research Paper Award

SAP Research and Innovation Awards 2008

IBM Faculty Award, 2007

Associate Editor, IEEE Transactions on Cloud Computing, 2013 - present.

PROFESSIONAL EXPERIENCE

Department Chairperson, Dept. of Computer Sc. & Engg, IIT Bombay, India   May 2019 - present
Professor, Dept. of Computer Sc. & Engg, IIT Bombay, India   Jan 2011 - present
Associate Professor, Dept. of Computer Sc., IIT Bombay, India   Feb 2003 - Dec 2010
Participate in academic policy decisions for the institute apart from advising Doctoral and Masters research candidates, Doctoral, Masters and Bachelors level coursework, research/consulting projects with industry/government and curricular development at all levels. Member of the Technology Advisory Board for The Securities and Exchange Board of India, State Bank of India, Clearing Corporation of India and National Securities Depository India. Board member at MySetu and Tutelez.com - both startups incubating at SINE, IIT Bombay.

Public Independent Director, CDSL India, India   Nov 2019 - present
Member of the board of directors of CDSL and chair of the standing committee on technology for CDSL.

Visting Researcher, Informatica, Redwood City, California, USA   June - July 2018

Visiting Researcher, Nutanix Inc., San Jose, California, USA   May - Jul 2017

Visiting Professor, Dept. of CS, Purdue University   Aug, 2015 - May 2016
Research and Teaching. Taught C/C++ Programming to a large freshman undergraduate class of over 400 students as well as Computer Architecture to a Sophomore CS class of over 200 students.

Consultant, InstartLogic, Palo Alto, CA   May 2015 - July 2016
Helped design distributed load balancing solutions to their edge data centers as well as design in high availability to their application acceleration chain.

Member, Board of Directors, Dena Bank, India Mar 2015 - Mar 2018

Vice President of R&D, Collation Inc., Palo Alto, CA, **July, 2000 - Feb, 2003**
Founded in Feb of 01, Collation Inc. focused on building software products for managing enterprise data centers. Specifically, they delivered products that achieve operational automation of large-scale enterprise software deployments that are based on J2EE technologies. As a founding member, I helped conceptualize the product, do the market research and build a business plan that raised more than $ 6M in Series A funding from Prism Capital and Worldview Tech partners in an extremely difficult funding climate. Collation Inc. was subsequently acquired by the IBM Tivoli Group in 2004.

VP, Software Engineering, Covad Comm. Grp., Santa Clara, CA **July, 1997 - July, 2000**
As an early entrant (first 15 employees), I helped build the engineering team at Covad from 0 to over a 100 engineers and a budget of over $ 32 M. Accountable for all of Covad's business process automation as well as that of its supply chain. Acquired and integrated two different software engineering groups and products through engineered buyouts. Responsible for spinning off a new venture to help sell Covad's OSS to Europe and Asia.

Standards Evangelist, Oracle Corp, Redwood Shores, CA, **July, 1996 - July, 1997**
Evangelist of OMG, W3C and J2EE standards within Oracle Corp and Oracle's representative to these bodies. Chief Editor for the CORBA Component model - joint submission to the OMG with SUN, IBM, Oracle, Netscape and Visigenic.

Principal Engineer, TCSI Corp, Berkeley, CA **April, 1993 - July, 1996**
Delivered a high performance, distributed object infrastructure (ORB, Services and Frameworks) for telecommunication applications. Responsible for technical leadership as well as project management in this role. Architected CORBA compliance into TCSI's proprietary infrastructure and managed development of the ORB, the interoperability modules and some OMG Cos services.

U.S. PATENTS GRANTED

1. US Patent # 7,962,590 Automated Discovery of a Multi-tier compute Infrastructure
2. US Patent # 7,337,184 Topology mapping of a multitier compute infrastructure
3. US Patent # 7,281,046 Application program interface for automating high speed network access ordering and provisioning processes
4. US Patent # 7,243,306 Service descriptor for a multitier compute infrastructure
5. US Patent # 7,210,143 Deployment of applications in a multi-tier compute infrastructure
6. US Patent # 6,463,079 Processing orders for high bandwidth connections

U.S. PATENT APPLICATIONS (PENDING)

1. 201921025326 Method and system for scaling computation in Blockchains
2. 20090144703 Method and system for versioning a software system
3. 20090144695 Method for ensuring consistency during software development

BOOK CHAPTERS AND JOURNAL PUBLICATIONS

1. Opportunistic live migration of virtual machines. Malayam Parambath Gilesh, Subham Jain, S. D. Madhu Kumar, Lillykutty Jacob, Umesh Bellur, Concurr. Comput. Pract. Exp. 32(5) (2020)
2. Optimizing MapReduce for energy efficiency. Nidhi Tiwari, Umesh Bellur, Santonu Sarkar, Maria Indrawan: Softw. Pract. Exp. 48(9): 1660-1687 (2018)
3. Whither Tightness of Packing? The Case for Stable VM Placement. IEEE Trans. Cloud Comput. 4(4): 481-494 (2016)

4. Boot Storms in Virtualized Data Centers, Durgesh Samant and Umesh Bellur, ACM Computing Surveys. 49(1): 16:1-16:36 (2016)

5. Classification Framework of Map Reduce Scheduling Algorithms, Nidhi Tiwari, Umesh Bellur, Santonu Sarkar and Maria Indrawan. ACM Computing Surveys, 2015. 47(3): 49:1-49:38

6. An Application Development Framework for Cyber Physical Systems. Pankesh Patel, Umesh Bellur and Sanjay Chaudhury. Book Chapter in Cyber Physical Systems - From Theory to Practice. CRC Press. ISBN 9781482263329. 2014.

7. QoS Elements of Web Services: Taxonomies, Ontologies, and Classifications: Manish Godse, Umesh Bellur, Rajendra Sonar, IJCNDS, Volume 6, Issue 2, 2011, DOI: 10.1504/IJCNDS.2011.038521

8. Semantic Matchmaking Algorithms for Web Services Matching, Umesh Bellur and Harin Vadodaria, Book Chapter in Advances in Greedy Algorithms, ISBN 978-953-7619-27-5, IN-TECH Publications.

9. Incorporating Underlay Awareness into Highly Available P2P Networks, Umesh Bellur and Madhu Kumar, International Journal of Communication Networks and Distributed Systems, Vol 4, No. 2, pp 133-160, InderScience Publishers.

10. Practice-Relevant Pedagogy for Mining Software Engineering Curricula Assets, Rajiv Ramnath, Jay Ramanathan & Umesh Bellur. Technical Report, OSU, Dept. of Computer Science and Engineering, OSU-CISRC-5/07-TR36. Also submitted to IEEE Journal of Engineering Education.

11. A taxonomy and classification of Adaptive event dissemination middleware with support for service guarantees. Shruti Mahambre, Madhu Kumar and Umesh Bellur, IEEE Internet Computing, Special Issue on Data Dissemination, Vol. 11, No. 4, PP 35-44, July 2007

12. Java & CORBA, Umesh Bellur, Book Chapter in Java Network Programming: Manning Publications, ISBN Number 1-884777-49-X

13. A Strategic Weapon for Data CLECs in Challenging Conditions. Umesh Bellur and Nagaraju Bandaru, Book chapter in Operations Support Systems 2002: Enabling the Next-Generation Network. ISBN: 1-931695-05-9, IEC Press

REFEREED
CONFERENCE
PUBLICATIONS

1. PanOpticon: A Comprehensive Benchmarking Tool for Serverless Applications. Nikhila Somu, Nilanjan Daw, Umesh Bellur, Purushottam Kulkarni: COMSNETS 2020

2. A Distributed Learning Simulation Platform for Edge Hierarchies.: Alka Bhushan, Aniket Shirke, Govind Lahoti, Umesh Bellur: COMSNETS 2020

3. Deterministic Container Resource Management in Derivative Clouds.: Chandra Prakash, Prashanth, Umesh Bellur, Purushottam Kulkarni: IC2E 2018: 79-89

4. Mining Swarm Patterns in Sliding Windows over Moving Object Data Streams. Alka Bhushan, Umesh Bellur, Kuldeep Sharma, Srijay Deshpande, Nandlal L. Sarda, SigSpatial 2017.

5. AUSOM: Autonomic Service-Oriented Middleware for IoT-based Systems, Umesh Bellur, Nanjangud C. Narendra, Swarup Kumar Mohalik, Proceedings of the 2017 Services Congress.

6. A Semantic-enabled Framework for Future Internet of Things Applications, Umesh Bellur, Pankesh Patel, Saurabh Chauhan, and Yongrui Qin, Proceedings of the 2017 Services Congress.

7. De-Fragmenting the Cloud. Mayank Mishra, Umesh Bellur. CCGrid 2016.

8. On Selecting the Right Optimizations for Virtual Machine Migration, Senthil Nathan, Umesh Bellur, Purushottam Kulkarni,. Proceedings of Virtual Execution Environments - VEE 2016.

9. Uploading and Replicating Internet of Things (IoT) Data on Distributed Cloud Storage. Akshay Kumar, Nanjangud C. Narendra, Umesh Bellur: IEEE CLOUD 2016: 670-677

10. BASS: Improving I/O Performance for Cloud Block Storage via Byte-Addressable Storage Stack. Hui Lu, Brendan Saltaformaggio, Cong Xu, Umesh Bellur, Dongyan Xu: ACM SoCC 2016: 169-181

11. Debunking the myth that tight packing is energy conserving. Swetha P. T. Srinivasan, Umesh Bellur, Ramamurthy Badrinath. ICDCN 2016.

12. CPU Frequency Tuning to Improve Energy Efficiency of MapReduce Systems. Nidhi Tiwari, Umesh Bellur, Santonu Sarkar, Maria Indrawan: ICPADS 2016: 1015-1022

13. Identification of critical parameters for MapReduce energy efficiency using statistical Design of Experiments. Nidhi Tiwari, Umesh Bellur, Santonu Sarkar, Maria Indrawan: IEEE IPDPS Workshops 2016: 1170-1179

14. WattTime: Novel System Power Model and Completion Time Model for DVFS-Enabled Servers. Swetha P. T. Srinivasan, Umesh Bellur, ICPADS 2015

15. Improving Energy Efficiency of IO-Intensive MapReduce Jobs. Nidhi Tiwari, Santonu Sarkar, Maria Indrawan-Santiago, Umesh Bellur. ICDCN 2015

16. Towards a comprehensive performance model of virtual machine live migration. Senthil Nathan, Umesh Bellur, Purushottam Kulkarni, ACM Symposium on Cloud Computing (SoCC) 2015

17. On Exploiting Page Sharing in a Virtualised Environment - An Empirical Study of Virtualization Versus Lightweight Containers, Ashish Sonone, Anand Soni, Senthil Nathan, Umesh Bellur, IEEE Cloud 2015.

18. Geometry Simplification Under Constraints - Shivanth P , Sandeep Kale, Vishal Goje , Nandlal Sarda, Umesh Bellur. SigSpatial 2014. Dallas, USA.

19. Cost Optimization in Multi-site Multi-cloud Environments with Multiple Pricing Schemes Umesh Bellur, Arpit Malani, Nanjangud C Narendra, IEEE Cloud 2014.

20. Predicting power needs in smart grids. Aman Mangal, Arun Mathew, Tanmay Randhavane, Umesh Bellur. DEBS 2014

21. A cost model for complex event operators. Umesh Bellur, DEBS 2014

22. An Empirical Study of Hadoop's Energy Efficiency on a HPC Cluster. Nidhi Tiwari, Santonu Sarkar, Umesh Bellur, Maria Indrawan, ICCS 2014.

23. On Parallelizing Large Spatial Queries Using Map-Reduce. Umesh Bellur, W2GIS 2014.

24. Online, deviation-constrained capacitated vehicle routing. Umesh Bellur. SIGSPATIAL/GIS 2013, Florida, USA.

25. On optimizing costs in multi-site, multi-cloud deployments, Umesh Bellur and Arpit Malani, Utility and Cloud computing 2013, Germany.

26. Resource availability based performance benchmarking of virtual machine migrations., Senthil Nathan, Purushottam Kulkarni and Umesh Bellur, ICPE 2013.

27. Minimizing Latency in Serving Requests through Differential Template Caching in a Cloud, Deepak Jeswani, Manish Gupta, Pradipta De, Arpit Malani and Umesh Bellur, IEEE International Conference on Cloud Computing, IEEE CLOUD 2012, July 2012, Maui, Hawaii, USA.

28. Risk Aware Provisioning and Resource Aggregation Based Consolidation of Virtual Machines, Kishaloy Halder, Umesh Bellur and Purushottam Kulkarni, IEEE International Conference on Cloud Computing, July 2012, Maui, Hawaii, USA.

29. VirtPerf, A Performance Profiling tool for Virtual Environments, Prajakta Patil, Puru Kulkarni and Umesh Bellur, Accepted at the IEEE International Conference on Cloud Computing, 2011, Washington DC, July 2011.

30. A Middleware For Adaptive Service Orientation In Pervasive Computing Environments, Narendra Nanjangud and Umesh Bellur, Middleware for Service Oriented Computing (MW4SOC 2010) workshop, Middleware 2010, Dec 2010, Bengaluru, India.

31. QoS based Service Selection, Manish Godse, Umesh Bellur, Rajendra Sonar, ICWS 2010, July 2010, Miami, USA.

32. On Using Network Tomography for Overlay Availability, Umesh Bellur and Mahak Patidar, ICDCN 2010, Kolkata, India,

33. Automated Web Service Composition Using Semantic Descriptions, Umesh Bellur and Tanmay Mande, APSCC 2009, Singapore.

34. Decentralized Adaptive Routing for Reliability in Event Broker Networks, Shruti P. Mahambre & Umesh Bellur, ICPADS 2009, Shenzen, China.

35. On Using Network Tomography for Overlay Availability, Umesh Bellur and Mahak Patidar, ICDCN 2010, Kolkata, India.

36. TSAR - Type Specific Adaptive Routing for Reliability in Event Based Middleware, Shruti P. Mahambre & Umesh Bellur, Poster at DEBS 2009, Nashville, USA.

37. Web Service Ranking Using Semantic Profile Information, Umesh Bellur and Harin Vadodaria, Accepted for publication in the Proceedings of IEEE ICWS 2009, Los Angeles, CA, July 2009.

38. Underlay Aware Resiliency in P2P Overlays, Madhu Kumar S.D, Umesh Bellur, and V. K. Govindan, Proceedings of the 10th International Conference on Distributed Computing and Networking - ICDCN 2009, Hyderabad, India.

39. Correctness of Request Executions in Online Updates of Concurrent Programs, Yogesh Murarka and Umesh Bellur, Proceedings of the 14th APSEC, Beijing, China, Dec 2008

40. On Extending Semantic Matchmaking to Include Preconditions and Effects, Umesh Bellur and Harin Vadodaria, Proceedings of The International Conference on Web Services (ICWS) 2008, Beijing, China, Sept 2008

41. An adaptive approach for ensuring reliability in event based middleware, Shruti P. Mahambre, Umesh Bellur, Second Conference on Distributed Event Based Systems, Rome, Italy, July 2008

42. Availability models for underlay aware overlay networks, Madhu Kumar SD, Umesh Bellur, Second Conference on Distributed Event Based Systems, Rome, Italy, July 2008

43. Towards seamless user mobility in service oriented environments via context awareness, Umesh Bellur, Siddharth Bondre, Proceedings of the 6th International Conference on Pervasive Services, Sorrento, Italy, July 2008

44. Adding Underlay Aware Fault Tolerance to Event Broker Networks, Umesh Bellur and Madhu Kumar, ICSOFT 2007, Barcelona, Spain, July 2007

45. A Methodology and Tool for Determining Inter-component Dependencies Dynamically inJ2EE Environments, Umesh Bellur, The Third International Conference on Autonomic and Autonomous Systems, Athens, Greece. June 2007.

46. Root Cause Isolation for Self Healing in J2EE Environments, Umesh Bellur and Amar Agrawal, First International Conference on Self Adaptive and Self Organizing Systems (SASO) 2007, Cambridge, USA.

47. An Improved Semantic Matchmaking Algorithm, Umesh Bellur and Roshan Kulkarni, International Conference on Web Services 2007, July 2007, Salt Lake City, USA

48. A Distributed Algorithm for Underlay Aware and Available Overlay Formation in Event Broker Networks for Publish/Subscribe Systems, Madhu Kumar and Umesh Bellur, DEPSA 2007, a workshop of ICDCS 2007, June 2007, Toronto, Canada

49. Reliable Routing of Event Notifications over P2P Overlay Routing Substrate in Event Based Middleware, Shruti Mahambre and Umesh Bellur, Proceedings of Hot P2P '07, a workshop of IPDPS 2007, March 2007, Long Beach, CA, USA.

50. Adaptive Overlays for Event Based Middleware- A case for Chordal Reliability Rings: Madhukumar S.D., Umesh Bellur and V.K. Govindan, ADCOM 2006, India, Dec 2006

51. Power Aware Duty Scheduling for Wireless Sensor Networks, Umesh Bellur and Nishant Jaiswal., ICDCN, India, Dec 2006

52. A Versioning Scheme for Consistent Evolution of OO Applications, Umesh Bellur and Vallieswaran V., 13th APSEC, India, Dec 2006

53. Safety Analysis for Dynamic Update of Object Oriented Programs, Yogesh Murarka, Umesh Bellur and Rushikesh Joshi.,13th APSEC, India, Dec 2006

54. An Underlay Aware, Adaptive Overlay for Event Broker Networks, Madhu Kumar S.D., Umesh Bellur, Adaptive and Reflective Middleware Workshop, Middleware 2006, Melbourne, Australia, Nov 2006

55. An Academic Perspective on Globalization in the Software Industry. Umesh Bellur, Short paper at Compsac 2006, Chicago, USA, Sept 2006

56. Transformation of UML Design Model into Performance Model - A Model-Driven Framework., Ramrao Wagh, Umesh Bellur, Bernard Menezes.,ICEIS (3) 2006: 576-580

57. On OO Design Consistency in Iterative Development, Umesh Bellur and Vallieswaran V., Software Engineering track of ITNG 2006, Las Vegas, USA, April 2006

58. On Using OO Techniques to Establish Workflow Conformance, Umesh Bellur, Poster Paper in OOPS Track of ACM SAC 2006, Dijon, France, April 2006

59. xSpace - A Tuple space for XML and its application in Orchestration of Web Services, Umesh Bellur and Siddharth Bondre, Distributed and Grid Computing Track of ACM SAC 2006, Dijon, France, April 2006

60. Towards a Programming Model and Middleware Architecture for Self-configuring systems, Umesh Bellur and Narendra Nanjangud, COMSWARE 2006, New Delhi, India, January 2006

61. Functional and Architectural Adaptation in Pervasive Computing Environments, Umesh Bellur, S.K. Nandy, K.Kalapriya and Narendra Nanjangud, MPAC, Middleware 2005, Grenoble, France, Nov 2005

62. Towards Service Orientation in Pervasive Computing Systems, Umesh Bellur and Narendra Nanjangud, ITCC 2005, Las Vegas, USA, April 2005

63. A Declarative Framework to create Differentiated Service Levels in Component Based Middleware, PDCS 2004, Cambridge, MA, Nov 2004

64. Performance Prediction and Physical Design of J2EE based Web applications, WSEAS CSCC 2004, Athens, Greece., July 2004

65. Autonomic Computing Platform for Distributed Enterprise Computing, Umesh Bellur, Position paper at Workshop on Software Performance (WOSP), January 2004.

66. Discovery in distributed object environments - Umesh Bellur, NCOOT August 2003.

67. The Role of Components and Standards in Software Reuse, Umesh Bellur, Workshop on Compositional Software Architectures. 1998, Monteray CA.

68. Musings of an Engine Builder, Umesh Bellur, Position paper at the OOSPLA '95 Workshop on Object Engines.

69. Building Large Scale Distributed Systems, Umesh Bellur and Swami Venkates, Position paper at the OOPSLA '95 workshop on "Building Large Scale Distributed Object Systems".

70. CORBA and Beyond - Frameworks for distributed object system development, Umesh Bellur, OOPSLA '94 workshop on CORBA.

71. Clustering - Composition for Active Object systems, Umesh Bellur, Gary Craig, Doug Lea, Proceedings of the 27th Hawaii International conference on System Sciences.(01/94)

72. DIAMONDS - Principles and Philosophy, Umesh Bellur, Gary Craig, Kevin Shank, Doug Lea and Vaughn Combs, CASE Center Technical Report No. 9313, Syracuse University, 06/93

73. Clusters: A Pragmatic Approach towards Supporting a Fine Grained Active Object Model in Distributed Systems, Gary Craig, Umesh Bellur, Kevin Shank and Doug Lea, Proceedings of the Ninth International Conference on Systems Engineering, UNLV, 07/93

74. A Shared Memory Programming Environment for Distributed Systems, Umesh Bellur & Sumana Srinivasan, Proceedings of OpenForum '92 Technical Conference, Utrecht, The Netherlands, 11/92

75. A C++ Class Flattening Tool, Umesh Bellur & Imran Bashir, Proceedings of C++ at Work, Santa Clara, CA, 11/91

76. Transparent Load Sharing on UNIX, Umesh Bellur, Gary Craig, Kevin Shank, CASE Center Technical Report, Syracuse University, 05/92

GRANTS SECURED

- Nutanix grant for research into warming up meta data caches. $20000 with Prof. Purushottam Kulkarni, June 2019

- Netapp Faculty award for work in cloud storage - $20000 with Prof. Purushottam Kulkarni, Sept 2017

- VMWare research award for work in Cloud Computing, - $85000 with Prof. Purushottam Kulkarni, Sept 2017

- IBM Shared University Research (SUR) grant for Cloud Collaboratory - $75000 with Prof. Purushottam Kulkarni, June 2013

- Informatica research grant for research into Complex Event Processing, US $10000, June 2012

- IBM CAS Grant for research into Cloud Computing, US $20000, with Profs. Varsha Apte and Puru Kulkarni, Jan 2010

- Yahoo Inc, Unrestricted grant of Rs 5 Lakh with Prof. Puru Kulkarni, Dec 2009

- SAP Research and Innovation Award, $22000, Oct. 2008.

- Motorola Research grant for research into seamless mobility in service oriented environments., $ 14000 for 2006-2007, Sept 2006.

- IBM Faculty Award for research into self-configuration and self-healing in Autonomic Computing; $ 26000 July 2006

- Intel IT Research Council, Continuing Grant for research into Self healing and Performance Modeling of Enterprise Applications, $ 24000 along with Prof. Varsha Apte of CSE, IIT Bombay, January 2006

- Intel Corp, Linux Based Video Learning Solution for Distance Education, $60,000 along with Prof. Deepak Phatak, January 2005

- Department of Science and Technology, Govt. of India - Service Oriented Architectures for NRDMS Applications, Rs 15 Lakh, April 2005

- Intel IT Research Council, Follow up grant for research into Autonomic Computing issues, $ 24000 along with Prof. Varsha Apte of CSE, IIT Bombay, March 2005

- L and T Infotech - Enterprise Integration Architectures with Service Orientation, Rs 12 Lakh, June 2004

- Intel IT Research Council, Dynamic Determination of Topology for Distributed enterprise applications, $ 12000 along with Prof. Varsha Apte of CSE, IIT Bombay, July 2004

- IRCC at IIT Bombay - Autonomic Computing Infrastructure, Rs 2 Lakh, Seed Grant, July 2003

1. Introduction to C programming (CS 240), Purdue University, Spring 2016 (400 students)
2. Computer Architecture (CS 250), Purdue University, Fall 2015 (200 students).
3. Distributed Algorithms, Graduate, Spring 2008, 2007, 2006, 2005, 2004 - 30-45 students.
4. Introduction to Distributed Systems - Undergraduate - Spring 2008, 2009, 2011, 2015, 2017
5. SOA and Semantic Web Services, Graduate, Fall 2008
6. Database Systems, Under Graduate, Fall 2007 (current), 65 students.
7. Software engineering, Graduate, Fall 2006, 22 students.
8. OO Design - Fall 2005, 2005, 2003 - 30 students.
9. Seminar Series on eCommerce & eBusiness Architectures - Summer 2003
10. Short course on Service Oriented Architectures (Continuing Education Program) - Summer 2006
11. Short course on OO Design (Continuing education program at Pune University) - Summer 2005

Ph.D.

- Mayank Mishra - Graduated Sept 2015, Currently a postdoc at Iowa State Univ.
- Senthil Nathan - Graduated Sept 2016, Currently at IBM Research.
- Nidhi Tiwari - Graduated Mar 2016, Currently at Infosys India.
- Yogesh Murakka - Graduated Aug 2010, Currently at Samsung Research Labs.
- Shruti Mahambre - Graduated March 2011, Currently at TCS Labs, India.
- Madhu Kumar - Graduated July 2009, Currently a faculty member at NIT Calicut.

Masters

Advised over 50 Master's students from the past 14 years at IIT Bombay.

Program Committees

- PC Co-Chair, IEEE SCC 2017
- PC Co-Chair, ISEC 2017
- Associate Editor, IEEE Transactions on Cloud Computing. 2013-current.
- PC Member - CCGrid and ICPE 2015
- Organizing Chair, DEBS 2014
- Chair of the Doctoral Symposium at IEEE Cloud 2013.
- Editor for the CSI Transactions on ICT from June 2010 - June 2015
- Track Chair for Cloud Computing, ACM SAC 2011.
- PC Chair for the 4th Indian Software Engineering Conference, 2010.
- Workshops chair for ICWS 2009
- Distributed Event Based Systems DEBS 2007, 2008, 2009
- PC member for ICPADS 2008, ICDCIT 2008

- Poster Chair for SASO 2008
- Track Chair for Autonomic and Cloud Computing track of ACM SAC 2007, ACM SAC 2008, ACM SAC 2009
- IEEE International Conference on Autonomic Computing ICAC 2007
- IEEE Self Adaptive and Self Organizing Systems SASO 2007
- ICDCS DEPSA 2007
- International Workshop on Pervasive Systems and Applications, 4th IEEE ICCSA, 2006
- ITNG 2007, ITNG 2005, ITNG 2005
- International Conference on Data Engineering ICDE 2006
- Object-Oriented Programming Languages and Systems - Special Track at the 21st ACM Symposium on Applied Computing, SAC 2005, 2006
- International Workshop on Managing Context Information in Mobile and Pervasive Environments, MCMP 2005
- Hawaii International Conference on System Sciences (HICSS) 05
- National Conference on OO Technologies (NCOOT) 03, 04
- ACM Sigmetrics Workshop on Software Performance (WOSP) 04
- Object-Oriented Programming Languages and Systems - Special Track at the 19th ACM Symposium on Applied Computing, SAC 2004
- International Conference on High Performance Computing - HiPC 2003