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Dr. Sanjay Chaudhary

Experience

Total experience: 30 years
Academics: 28 years, Industry: 2 years

Current Employment

**July 2, 2013 onwards: Professor and Interim Dean,
School of Engineering and Applied Science, Ahmedabad University,
GICT Building, Central Campus, Navrangpura, Ahmedabad-380 009, India**
Dean of Students, Ahmedabad University
**Member: Academic Council, University Research Board,
Faculty Recruitment Committee, Faculty Development and Evaluation
Committee, and Internal Quality Assurance Committee of Ahmedabad
University,**
**Associate Dean, School of Computer Studies, Ahmedabad University (since
October, 2017), Head (Research) during 2014 to 2016.**

Past Employment

July 14, 2001 to July 1, 2013:
**Dhirubhai Ambani Institute of Information and Communication
Technology (DA-IICT), Gandhinagar, Gujarat, India**

Designation: Professor (2008-2013) and Dean (Academic Programs)

Associate Professor (2001-2008)

Member, Board of Governors, DA-IICT, 2011-13

Member, Academic Council, DA-IICT, 2011-13

Teaching Assignments (2013 onwards)

Teaching core courses on 'Data Structures and Algorithms', 'Database Management System', and 'Operating Systems', 'Cloud Computing' at BTech (ICT) programme. Teaching 'Data Analytics and Visualization', 'Big Data Analytics' at MTech (CSE) and domain courses for PhD programme.

Previously, taught various under graduate and post graduate computer science and engineering courses at DA-IICT during July 2001 to June, 2013:

B.Tech. (ICT) core courses: Operating Systems, Systems Software, Object-oriented Programming, and Data Structures

M.Tech. (ICT) core and elective courses: Service-oriented Computing, Grid Middleware and Object-oriented Systems and Standards

B.Tech. (ICT) Elective courses: Distributed Computing, Grid Computing, and Unified Modeling Language and Model-driven Architecture

M.Sc. (ICT in Agriculture and Rural Development) core course: Agricultural Information Systems

Theses Supervisor:

Seven students have completed Ph.D. theses and at present, three students are doing Ph.D. [Please refer Annexure 1]

Supervised thirty-four M. Tech. (ICT) theses, please refer Annexure 2

	Supervised several B. Tech. projects, and research internships, and design projects
Past Employment (1987-2001)	Sept 1987 – July 13, 2001 Sr. Lecturer, Department of Computer Science, Gujarat University, Ahmedabad
Education	Ph. D. (Computer Science), Gujarat Vidyapeeth, Ahmedabad, India, 2004
Publications	Authored eight books, nine book chapters, more than hundred research papers in international conferences and journals and twelve literary articles. Please refer Annexure 3
Awards	<ul style="list-style-type: none"> • Gujarat Sahitya Academy awarded second prize to the book ‘Girnar’, written by Sanjay Chaudhary under ‘Essays and Travelogue’ category for the year 2009 • Patron, Computer Society of India, 2009
Research Grants and Projects	Please refer Annexure 4
Research Areas	<ul style="list-style-type: none"> • Cloud Computing • Service-Oriented Computing • Data Analytics • ICT Applications in Agriculture and Rural Development
Member, Program Committee	Please refer Annexure 5
Entrepreneurship and Industry Employment	Co-founder, Rangdwar Software Services, Ahmedabad During the period of 1995-2000, designed, developed and implemented number of information systems for leading corporate, co-operative, and private companies
Professional memberships	Senior Member, Institute of Electrical and Electronics Engineers (IEEE) Member, Association of Computing Machinery (ACM) Life Member, Computer Society of India Patron, Computer Society of India, Ahmedabad Chapter Life Member, Gujarati Sahitya Parishad Life Member, Indian Society for Technical Education
Other Contributions	Member, Expert Panels, Department of Science and Technology and Department of BioTechnology, Government of India Member, TWG, Dept. of Science and Technology, ‘Soil Data Standards’ Member, Board of Studies, DA-IICT Member, Board of Study, Computer Engineering, CHARUSAT Member, Faculty Board, CHARUSAT Member, ‘Faculty of Doctoral Studies & Research’, Nirma University Member, Academic Council, Sardar Krushinagara Dantiwada Agricultural University Member, Faculty of Technology, Nirma University Member, Academic Council, Lokbharati, Sanosara, Dist. Bhavnagar Coordinator, Design and Construction of Institute of Engineering and Technology, Ahmedabad University building Convener, ICT Committee, DA-IICT during 2001-2007: I was involved in strategic planning for academic and research requirements of ICT infrastructure, identification, selection and procurement of equipment and

software, providing guidance to the team comprising of system engineer, system administrator, and facility management engineers.

Convener, Information System Development Committee, DA-IICT, 2002-05:
I participated actively as an analyst and designer to develop information systems of DA-IICT, namely Student Registration System, Student Evaluation and Grading System, Inventory Management System, Office Management System, integration with Payroll System and few other information systems.

Convener, Continuing Education Program (CEP), DA-IICT, 2007-2011

Member, ICT Committee, DA-IICT, 2007-2010

Member, BTech Program Curriculum Revision Committee, 2007-08, 2006-07

Member, MSc(IT) Program Curriculum Revision Committee, 2012

Member, MSc(ICTARD) Program Curriculum Revision Committee, 2008

Expert advisor/member of:

- Member, Advisory and Technical Committee for Implementation of Gandhinagar Smart City, 2015-16
- Member, expert panel for evaluation of EoI for Unified communication solution for GoG - Sachivalaya integrated Communication Network (SICN)
- Task force, “Modernize the use of ICT equipment for effective conservation of wild life”, Gujarat state, India, 2008, 2015. The task was to identify and recommend modern ICT tools to protect lions of Gir Lion Sanctuary, Gujarat
- Government of Gujarat, India in standardization, identification and selection of vendors for various state level computerization projects, 2007-08
- Consultant for collaborative research and development projects undertaken by DA-IICT with software and technology companies, 2007-08
- Member, National Alliance for Mission 2007, M. S. Swaminathan Research Foundation
- Program coordinator, two-day intensive workshop on “Service-Oriented Computing” organized by IEEE Gujarat section at DA-IICT during December 16-17, 2006. Actively contributing to IEEE student branch activities of DA-IICT
- Mentor of team dimension, students of B.Tech. (ICT) of DA-IICT, Project on “Vibhavana”, contested world final rounds of Embedded Development category of Imagine Cup, organized by Microsoft, Seoul, Korea, August, 2007
- Faculty guide, two project teams from DA-IICT, "IBM Initiative to Nurture a Vibrant IT Eco System, Gujarat", 2005, DA-IICT received two servers from IBM
- Invited to be a judge for Software Design Category, World finals of Imagine Cup, organized by Microsoft, Brasil, 2004
- Convener, Program Committee, national workshops on “ICT in Agriculture” organized by Indian Association for Information Technology (IAITA) and DA-IICT during 2003, 2004, 2006, 2008
- Honorary Treasurer, Indian Association for Information Technology in Agriculture (IAITA)

References

Will be made available on request

Hobbies

Literature, Music, Films and Wild Life

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Annexure 1

Ph.D. Thesis Supervisor

Following candidates have successfully completed PhD research work under my supervision :

1. “Event-driven Service-oriented Architecture for Dynamic Composition of Web Services”, by Zakir Laliwala, Ph.D., DA-IICT, 2008
Thesis Supervisor: Dr. Sanjay Chaudhary
2. “Dynamic Information Management Methodology with Situation Awareness Capability”, by Vikram Sorathia, Ph.D., DA-IICT, 2008
Thesis Supervisors: Dr. Sanjay Chaudhary and Dr. Anutosh Maitra
3. “Micro-level Drought Preparedness with Information Management and Rural Knowledge Centres: A Framework to Support Rural Farm Families”, by Guntuku Dileep Kumar, Ph.D., DA-IICT, 2010
Thesis Supervisors: Dr. Sanjay Chaudhary, DA-IICT and Dr. V. Balaji, ICRISAT, Hyderabad
4. “Time Series Modeling and Prediction using Postfix Genetic Programming" by Vipul Dabhi, Dharmsinh Desai University, Nadiad, India, Thesis Supervisor: Dr. Sanjay Chaudhary, 2014
5. "Performance Modeling and Optimization of Live Migration of Virtual Machines" by Minal Patel, Dharmsinh Desai University, Nadiad, India, Thesis Supervisor: Dr. Sanjay Chaudhary, 2018
6. Purnima Shah, School of Engineering and Applied Science, Ahmedabad University, ‘Developing Big Data Analytics Architecture for Spatial Data’, 2019
7. Ankit Desai, School of Engineering and Applied Science, Ahmedabad University, ‘Cost-sensitive Boosting for Big Data’, 2019

At present, following candidates are doing PhD research work under my supervision:

1. Deepak Hiremath, School of Engineering and Applied Science, Ahmedabad University, ‘ICT Interventions to Improve the Performance of Canal Irrigation Sector’
2. Vikas Kumar, School of Engineering and Applied Science, Ahmedabad University, ‘Opinion Mining and Sentiment Analysis’
3. Rupak Agrawal, ‘Robust Brain Tumor Segmentation’, [Co-Supervisor] with Dr. Mehul Raval

Annexure 2

Thesis Supervisor, M. Tech. (ICT)

1. Saurabh Chauhan, ‘Enabling application development for the Internet of Things’, 2015-16, SEAS-AU
2. Riddhi Patel, ‘Big Data Analytics for Crop Recommendation System’, 2015-16, SEAS - AU
3. Chetan Moradiya, ‘Ontology Reasoning, 2013-14, DA-IICT’
4. Aakash Goyal, ‘Integration of RESTful web services in an Agro-advisory system’, 2013-14, DA-IICT
5. Kashyap Raiyani, ‘Virtual Machine Migration’, 2013-14, DA-IICT
6. Narender Reddy, ‘Load Balancing of Virtual Machine Placement’, 2012-13, DA-IICT
7. Deep Parekh, ‘Scalability of SaaS using Memcached’, 2012-13, DA-IICT
8. Mohammed Husain, ‘RESTful Service Composition’, 2012-13, DA-IICT
9. Priyanka Joshi, ‘Agro-produce Marketing: Development of Agro-tagger and Suggestion Generation System’, 2011-12, DA-IICT
10. Piyush Aghera, ‘An Approach to Build Multi-Tenant SaaS Application’, 2011-12, DA-IICT
11. Amita Sharma, ‘Reducing Climate Vulnerabilities of Cotton Farmers in North Gujarat’, 2011-12, DA-IICT

12. Yash Jain, "Generating Recommendations For Agricultural Crop Production", 2011-12, DA-IICT
13. Dhairya Vora, "Resource Allocation on IAAS(Infrastructure-As-A-Service) Cloud", 2010-11, DA-IICT
14. Mehul Patel, "Agro-Produce Marketing Using Social Network ", 2010-11, DA-IICT
15. Shreyansh Bhatt, "Database Migration on Cloud", 2010-11, DA-IICT
16. Tejas Chauhan, "Service-Level Agreement Matching on Cloud", 2010-11, DA-IICT
17. Rohit Kumar Singh, "SPARQL Query Optimization", 2010-11, DA-IICT
18. Janki Akhani, "Negotiation for Resource Allocation on Infrastructure As A Service Cloud", 2009-10, DA-IICT
19. Amit Nathani, "Resource Allocation on Infrastructure As A Service Cloud using Policies", 2009-10, DA-IICT
20. Sandip Khakhar, "Bi-directional Service Composition", 2009-10, DA-IICT
21. Abhay Kumar, "Issues of Resource Allocation(CPU) in Cloud Computing Environment using Xen Virtualization", 2008-09, DA-IICT
22. Gaurav Somani, "Virtual machine Isolation and Scheduling", 2008-09, DA-IICT
23. Pankesh Patel, "Context Aware Semantic Service Discovery", 2008-09, DA-IICT
24. Ameer Desai, "Web Services Policy in Grid", 2007-08, DA-IICT
25. Nrupen Chudasma, "Service Selection and WS-Agreement", 2007-08, DA-IICT
26. Janki Mehta, "Checkpointing and Recovery Mechanism in Computational Grid", 2006-07, DA-IICT
27. Shweta Goyal, "Design and Development of Agriculture Ontology", 2006-07, DA-IICT
28. Shakti Purohit, "Resource Discovery in Computational Grid", 2005-06, DA-IICT
29. Dhaval Shah, "Model for Grid Service Instance Migration", 2004-05, DA-IICT
30. M. Vivekananda Reddy, "Scheduling in Grid: Rescheduling MPI Applications Using Fault-tolerant MPI Implementation", 2004-05, DA-IICT
31. Nitin Garg, "Performance Evaluation of JDO in J2EE Architecture", 2004-05, DA-IICT
32. Dhawal Patel, "Non-uniform Information Dissemination for Performance Discovery in Computational Grids", 2004-05, DA-IICT
33. Mayank Mishra, "Physical and Logical Mobility of CORBA Servants under Intermittent Connectivity Nomadic Environments", 2003-04, DA-IICT
34. Sajid Rahi, "Design of architecture of artificial neural network", 2003-04, DA-IICT

ANNEXURE 3

List of Research Publications

Books

- Sanjay Madria, Philippe Fournier-Viger, Sanjay Chaudhary, and P. Krishna Reddy (Eds.), Big Data Analytics 7th International Conference, BDA 2019 Proceedings, Part of the Lecture Notes in Computer Science book series (LNCS, volume 11932) Springer, ISBN 978-3-030-37187-6, 2019
- S. Chaudhary, ઉપરવાસ વિશે (Upervas Vishe), Rangdwar Prakashan, ISBN: 978-81-93734-88-9, 2019
- S. Chaudhary, G. Somani, and R. Buyya (Eds.), Research Advances in Cloud Computing, Springer Nature, ISBN 978-981-10-5025-1, 2017
- S. Chaudhary, ગિરનાર Girnar (Hindi), Book Type: epub format (E-book), Ahmedabad: Rangdwar Prakashan, 2016, ISBN: 978-93-8012590
- S. Chaudhary, ગિરનાર (Girnar), Fourth Revised Edition, Ahmedabad: Rangdwar Prakashan, 2014, 2013, 2011, 2009, ISBN: 978-93-80125-00-8 (Gujarat Sahitya Academy has awarded second prize to the book 'Girnar' under 'Essays and Travelogue' category for the year 2009)
- R. P. Soni and S. Chaudhary, સુનિયોજિત કોબોલ (Structured COBOL), New Delhi: Tata-McGraw Hill Book Publishing Company Limited, 1992, (six editions), 337 pages, ISBN-10 0074624296, ISBN-13 9780074624296
- R. P. Soni, S. Chaudhary and H. M. Patel, અંગત કોમ્પ્યુટર અને ડોસ પેકેજસ (Personal Computer and DOS Packages), New Delhi: Tata-McGraw Hill Publishing Company Limited, 1995, (five editions), 415 pages, ISBN-10 0074624458, ISBN-13 9780074624456
- R. P. Soni and S. Chaudhary, માહિતી ટેકનોલોજી વિકાસ અને વિનિયોગ (Information Technology: Development and Applications), Ahmedabad: Nirav Prakashan, 1999

Book Chapters

- S. Chaudhary and V. Kumar, [Service Oriented Architecture and Spatial Data Integration for Agro Advisory Systems](#), in Book: [Geospatial Infrastructure, Applications and Technologies: India Case Studies](#), N. L. Sarda · P. S. Acharya · S. Sen (Eds.), Springer Nature Singapore Pte Ltd., pp. 185-199, ISBN 978-981-13-2329-4, 2018
- M. Raval, R. Gandhi and S. Chaudhary, "Insider Threat Detection: Machine Learning Way", in Book "Versatile Cybersecurity", M. Conti, G. Somani and R. Poovendran (eds.), Springer Nature Switzerland AG, ISBN 978-3-319-97642-6, pp 19-53, 2018
- M. Patel, S. Chaudhary and S. Garg, 'Performance Modeling and Optimization of Live Migration of Virtual Machines in Cloud Infrastructure', Book: 'Research Advances in Cloud Computing', Eds.: S. Chaudhary, G. Somani and R. Buyya, Springer Nature, ISBN: 978-981-10-5025-1, 2017
- P. Patel, T. Luo, U. Bellur, and S. Chaudhary, 'Application Development Framework for Developing Cyber-Physical Systems', Book : 'Cyber Physical Systems: From Theory to Practice ', CRC Press, Taylor & Francis Group, USA, 2015, ISBN 9781482263329
- S. Bhatt, S. Chaudhary, and M. Bhise, Migration of data between cloud and non-cloud datastore, Book: Migrating Legacy Applications: Challenges in Service Oriented Architecture and Cloud Computing Environments, Publisher: IGI Global, November 2012, pp. 206-225, DOI: 10.4018/978-1-4666-2488-7, ISBN13: 9781466624887, ISBN10: 1466624884, EISBN13: 9781466624894
- A. Sheth and S. Chaudhary, Preface, Book: "Semantic Services, Interoperability and Web Applications: Emerging Concepts", IGI Global, 2011, ISBN13: 9781609605933
- T. Padia, M. Bhise, and S. Chaudhary, "Semantic Web Data Partitioning", Book: "Advancing Information Management through Semantic Web Concepts and Ontologies", Publisher: IGI Global,

- November 2012, pp. 154-165, DOI: 10.4018/978-1-4666-2494-8, ISBN13: 9781466624948, ISBN10: 1466624949, EISBN13: 9781466624955
- Asif Akram, Sanjay Chaudhary, Prateek Jain, Zakir Laliwala and Rob Allan, Chapter on “Grid Business Process”, in "Securing Web Services: Practical Usage of Standards and Specifications", published by Idea Group Inc., 2007, pp. 257-297, ISBN13: 9781599046396
 - S. Chaudhary, Z. Laliwala, and V. Sorathia, Chapter on “Building Semantic Business Services”, in “The Semantic Web and its Applications”, Springer, 2006, pp. 323-350, , ISBN 978-0-387-30239-3

Journal Papers

- M. P. Patel and S. Chaudhary, "Edge Computing: A Review on Computation Offloading and Light Weight Virtualization for IoT Framework", International Journal of Fog Computing (IJFC), IGI Global, 2020, DOI: 10.4018/IJFC.2020010104
- A. Desai and S. Chaudhary, “Distributed AdaBoost Extensions for Cost-sensitive Classification Problems”, International Journal of Computer Applications, ISSN: 0975-8887, 2018
- K. J Modi, S. Garg, and S. Chaudhary, "An Integrated Framework for RESTful Web Services Using Linked Open Data", International Journal of Grid and High Performance Computing, Volume 11, Issue 2, April-June 2019, ISSN: 1938-0259, DOI: 10.4018/IJGHPC.2019040102
- R Gandhi, MS Raval, S Chaudhary, "Pattern Discovery for Insider Threat Detection", CSI Communications 2 (42), 31-33
- J. V. Gautam, H. B. Prajapati, V. K. Dabhi, and S. Chaudhary, 'Empirical Study of Job Scheduling Algorithms in Hadoop MapReduce', Cybernetics and Information Technologies, Volume 17, No. 1, 2017, Print ISSN: 1311-9702, Online ISSN: 1314-4081, DOI: 10.1515/cait-2017-0012
- S. Garg , K. Modi and S Chaudhary, ‘A QoS-aware Approach for Runtime Discovery, Selection and Composition of Semantic Web Services’, International Journal of Web Information Systems, Emerald, Vol. 12, Issue 2, ISSN: 1744-0084, 2016, online: <http://www.emeraldinsight.com/doi/abs/10.1108/IJWIS-12-2015-0040>
- M. Patel, S. Chaudhary and S. Garg, 'Improved Pre-copy algorithm using Statistical Prediction and Compression Model for Efficient Live Memory Migration', International Journal of High Performance Computing and Networking, Inderscience , ISSN online: 1740-0570, ISSN print: 1740-0562, 2015
- M. Patel, S. Chaudhary and S. Garg, 'Machine Learning based Statistical Prediction Model for Improving Performance of Live Virtual Machine Migration ', Journal of Engineering, Hindawi, vol. 2016, Article ID 3061674, 9 pages, 2016, doi:10.1155/2016/3061674
- V. Dabhi and S. Chaudhary, "Solution Modeling using Postfix Genetic Programming ", Cybernetics and Systems: An International Journal, Taylor & Francis, Vol. 46, Issue 8, pp. 605-640, 2015 (DOI:10.1080/01969722.2015.1058662) Online ISSN 1087-6553
- V. Dabhi and S. Chaudhary, "Financial Time Series Modeling and Prediction using Postfix-GP ", Computational Economics, Springer, January 2015, DOI: 10.1007/s10614-015-9482-y, ISSN: 0927-7099 (Print) 1572-9974 (Online)
- V. Dabhi and S. Chaudhary, 'Performance Comparison of Crossover Operators for Postfix Genetic Programming', International Journal of Metaheuristics, Inderscience, 2014 Vol.3, No.3, pp.244 – 264, ISSN online: 1755-2184, ISSN print: 1755-2176
- V. K. Dabhi and S. Chaudhary, "Hybrid Wavelet-Postfix-GP Model for Rainfall Prediction of Anand Region of India", Hindawi Publishing Corporation, Advances in Artificial Intelligence, vol. 2014, Article ID 717803, 11 pages, 2014. doi:10.1155/2014/717803, ISSN: 1687-7470 (Print), ISSN: 1687-7489 (Online)

- V. Dabhi and S. Chaudhary, 'Empirical Modeling using Genetic Programming: A Survey of Issues and Approaches', *Natural Computing*, Springer, February 2014, DOI: 10.1007/s11047-014-9416-y, Print ISSN: 1567-7818, Online ISSN: 1572-9796
- A. Nathani, S. Chaudhary, and G. Somani, 'Policy Based Resource Allocation in IaaS Cloud', *Future Generation Computer Systems Journal*, Volume 28, Issue 1, January 2012, Pages 94-103 DOI: <http://dx.doi.org/10.1016/j.future.2011.05.016>, ISSN: 0167-739X
- S. Khakhkhar, V. Kumar, S. Chaudhary, 'Dynamic Service Composition: A bidirectional approach using forward and backward chaining', *The International Journal of Computer Science and Artificial Intelligence (IJCSAI)*, Sept. 2012, Vol. 2 Iss. 3, pp. 32-42, ISSN 2226-4450 (online) ISSN 2226-4469
- Dileepkumar, G., Holz-Clause, M., Aruna Sai, K., Chaudhary, S and Balaji, V., 'A Theoretical Framework for Rural Knowledge Centers', *Journal of US-China Education Review*. Vol. 8, No. 12, 2011, ISSN 1548-6613
- T. Padiya, M. Ahir, M. Bhise, and S. Chaudhary, 'Data Partitioning for Semantic Web', *International Journal of Computer and Communication Technology*, ISSN (Online): 2231 – 0371, ISSN (Print): 0975 – 7449, Vol 3, Issue 2, 2012, pp. 32-35
- S. Purohit and S. Chaudhary, 'Performance Analysis of Information Services in Computational Grids', *International Journal of Information Processing*, I. K. International Publishing House Pvt. Ltd, Volume 1, Number 2, pp. 40 – 48, August 2007, ISSN 0973–8215

Conferences and Workshop Papers

- R. Derasari, A. Kakadiya, M. Mehta, S. Patel, R. Gandhi, S. Chaudhary, and R. Goswami, "A Service-Oriented Human Capital Management Recommendation Platform", 13th Annual IEEE International Systems Conference (SysCon2019), Orlando, Florida, USA, April 8–11, 2019
- Shah P., Chaudhary S. (2018) Big Data Analytics Framework for Spatial Data. In: Mondal A., Gupta H., Srivastava J., Reddy P., Somayajulu D. (eds) Big Data Analytics. BDA 2018. Lecture Notes in Computer Science, vol 11297. Springer, Cham
- P. Shah and S. Chaudhary, 'Big Data Analytics and Integration Platform for Agriculture', World Congress on Computers in Agriculture (AFITA/WCCA2018), IITB, India, October 24-26, 2018
- Kartik Patel, Dhaval Patel, M. López-Benítez, Sanjay Chaudhary, "Distribution-free spectrum sensing for full duplex cognitive radio", *IEEE Proceedings of the 88th Vehicular Technology Conference (VTC 2018 Fall)*, Chicago, USA, August 27-30, 2018, pp. 1-5
- A. Desai and S. Chaudhary, 'Distributed Decision Tree v.2.0', 2nd IEEE international workshop on Big Spatial Data in conjunction with IEEE International Conference on Big Data (Big Data), Boston, USA, 2017.
- P. Shah, D. Hiremath, and S. Chaudhary, 'Towards development of spark based agricultural information system including Geo-spatial data', 2nd IEEE international workshop on Big Spatial Data in conjunction with IEEE International Conference on Big Data (Big Data), Boston, USA, 2017
- M. Panchal, D. Patel, and S. Chaudhary, 'Spectrum Occupancy Classification Using SVM-Radial Basis Function' 12th Springer / EAI International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2017), September 20-21, 2017, Lisbon, Portugal
- P. Shah, D. Hiremath and S. Chaudhary, 'Big Data Analytics Architecture for Agro Advisory System', 2nd annual IEEE International Workshop on Foundations in Big Data Computing (HiPC BigDF'16), in conjunction with the 23rd IEEE International Conference on High Performance Computing (HiPC 2016), in Hyderabad, India, December 19-22, 2016
- A. Parikh, M. Raval, C. Parmar, and S. Chaudhary, 'Disease Detection and Severity Estimation in Cotton Plant from Unconstrained Images', 3rd IEEE International Conference on Data Science and Advanced Analytics (DSAA 2016), Montreal, Canada, October 17-19, 2016

- A. Desai and S. Chaudhary, 'Distributed Decision Tree ', In Proceedings of the 9th Annual ACM India Conference (COMPUTE '16). ACM, New York, NY, USA, 43-50. DOI: <http://dx.doi.org/10.1145/2998476.2998478>
- S. Chauhan, P. Patel, F. Delicato and S. Chaudhary, 'A Development Framework for Programming Cyber-Physical Systems', 2nd International Workshop on Software Engineering for Smart Cyber-Physical Systems (SEsCPS'16) , In conjunction with ICSE 2016, Austin, Texas, USA, May 16, 2016
- D. Hiremath, P. Shah and S. Chaudhary, 'ICT Interventions to Improve the Performance of Canal Irrigation Sector in India', Proceedings of the Eighth International Conference on Information and Communication Technologies and Development, Article No. 51, ACM New York, USA, 2016, ISBN: 978-1-4503-4306-0, <http://dx.doi.org/10.1145/2909609.2909635>
- D. Soukaras, P. Patel, H. Song, S. Chaudhary, IoTSuite: a ToolSuite for prototyping internet of things applications , The 4th International Workshop on Computing and Networking for Internet of Things (ComNet-IoT), co-located with 16th International Conference on Distributed Computing and Networking (ICDCN), 2015
- M. Patel, S. Chaudhary and S. Garg, "Performance Modeling of Skip Models for VM Migration using Xen" at IEEE International Conference on Computing, Communication and Automation (ICCCA2016), 29-30 April, 2016 at Galgotias University, Uttar Pradesh, India, Catalog No (ISBN) # 978-1-5090-1274-9, Conference Record Number # 38137
- S. Chauhan, P. Patel, A. Sureka and S. Chaudhary, 'IoTSuite: A Framework to Design, Implement, and Deploy IoT Applications', The 15th ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN 16) [Demos and Posters], Vienna, Austria, April 11-14, 2016
- A. Desai, K. Jadav, and S. Chaudhary, 'An Empirical evaluation of CostBoost Extensions for Cost-Sensitive Classification', In Proceedings of the 8th Annual ACM India Conference (Compute '15). ACM, pp. 73-77. DOI=10.1145/2835043.2835048
- J. V. Gautam, H. B. Prajapati, V. K. Dabhi, S. Chaudhary, "A survey on job scheduling algorithms in Big data processing" at IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT), 5-7 March 2015 at Coimbatore, India, pp 1-11, DOI: 10.1109/ICECCT.2015.7226035, Print ISBN:978-1-4799-6084-2
- S. Chaudhary, M. Bhise, A. Banerjee, A. Goyal, C. Moradiya, 'Agro Advisory System for Cotton Crop', Workshop on Networks and Systems for Agriculture AGRINETs 2015 , collocated with 7th International Conference on Communication Systems and Networks COMSNETS , pp 1-6, 2015, DOI: 10.1109/COMSNETS.2015.7098701
- P. Patel, D. Soukaras, H. Song and S. Chaudhary, 'IoTSuite: A ToolSuite for Prototyping Internet of Things Applications', 4th Workshop on on Computing and Networking for Internet of Things (ComNet-IoT 2015), Co-located with 16th International Conference on Distributed Computing and Networking 2015 (ICDCN2015) , BITS Pilani, Goa Campus, January 4-7, 2015
- R. Kashyap, S. Chaudhary and P. M. Jat, 'Virtual Machine Migration for Back-end Mashup Application Deployed on OpenStack Environment ', Third International Conference on Parallel, Distributed and Grid Computing (PDGC 2014) , 2014, pp. 214 - 218, DOI: 10.1109/PDGC.2014.7030744
- M. Patel and S. Chaudhary, 'A Survey on Combined Approach Using Prediction and Compression to Improve Pre-copy for Efficient Live Memory Migration on Xen ', Third International Conference on Parallel, Distributed and Grid Computing (PDGC 2014) , 2014, pp. 445-450, DOI: 10.1109/PDGC.2014.7030787
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Research Talks / Invited Talks / Research Paper Presentation

- Talk on “Blockchain: The Next Evolution of Supply Chains”, One day International Webinar, Futuristic Technologies in Computer Science, in association with Computer Society of India Organized by Department of Computer Science & Engineering, DEPSTAR, CHARUSAT, October 10, 2020
- Talk “Cybersecurity”, CHARUSAT, September 23, 2020
- Talk on “Blockchain Technology”, CHARUSAT, September 2020
- Talk on “Research Challenges in Big Data Analytics, Natural Language Processing and Image Processing”, UGC – SAP National Seminar on “Digital Image Processing and Computer Vision”, Veer Narmad South Gujarat University, April 2, 2019
- Talk on "Blockchain Technology", Workshop on Blockchain for Data Privacy and Security (BPS 2019), CHARUSAT, April 1 to 6, 2019
- "Project Based Learning", Faculty Development Program - Induction Programme for Newly Recruited Faculty Members, Gujarat Technology University, March 28, 2019
- Sixth Big Data Analytics 2018 December 18 to 21, 2018, NIT, Warangal - Co-chair, Workshop Committee - Organized a workshop on "International Workshop on Blockchain Technology", December 18, 2018
 - Research Paper presentation, "Big Data Analytics Framework for Spatial Data", December 19, 2018
 - Member, Panel discussion on “Can DBMS technologies play a significant role in Big Data Analytics?” Moderator: Prof. Sharma Chakravarthy, The University of Texas at Arlington, USA
- Invited talk on "Making Classroom Teaching Interactive and Interesting", Faculty Orientation Programme at Nirma University, December 27, 2018
- Session Chair, “Geospatial Industry Trends and Prospects”, A two-day ‘National Symposium on Industry- Academia Collaboration, December 14-15, 2018, CEPT, Ahmedabad
- Expert talk on "Blockchain Technology", Pandit Deendayal Petroleum University, October 30, 2018
- Keynote talk on ‘Recent Advances of Machine Learning for Internet of Things and Data Analytics’ at One Day Symposium on “Recent Advances in IoT with Big-data analytics using Machine Learning Approach”, organized by A. D. Patel Institute of Technology, Vallabh Vidyanagar, 6th October, 2018
- Expert talk on ‘રોબોટ્સ: વિજ્ઞાનની આ અદભુત દેણીની આજ અને આવતીકાલ’, organized by Deepak High School and Rupayatan Trust, Amreli, September 14, 2018
- Expert talk on ‘રોબોટ : આશીર્વાદ કે અભિશાપ’ (‘Robot : Blessing or Curse’), Gujarat Vishwakosh Trust, Shri Bhadramkar Vidyadeepak, Gyan Vigyan Vyakhyan Shreni, Ahmedabad, Wednesday, July 18, 2018.
- Keynote talk on “Introduction to Cloud Computing”, Short Term Training Program (STTP) on “Cloud Computing and Internet of Things”, G H Patel College of Engineering and Technology, June 11, 2018
- Invited talk on ‘Research Proposal Writing’, Research Orientation Programme, Nirma University, June 07, 2018
- Invited talk on ‘Making Classroom Interactive’, Faculty Induction Programme, Nirma University, May 31, 2018
- Expert Talk on ‘Realizing IoT Vision’, National Symposium on Industry-Academia Collaboration for Geospatial Technologies, CEPT University, Ahmedabad, 15-16 December 2017
- Inaugural talk, Workshop on ‘Data Science for Agriculture and Natural Resource Management (DSANRM)’ in conjunction with Fifth International Conference on ‘Big Data Analytics 2017’, International Institute of Information Technology (IIIT, Hyderabad), December 12, 2017
- Session Chair, Tutorial on ‘An Introduction to Adversarial Machine Learning’ by Atul Kumar, IBM Research, Bangalore, INDIA, and Deepak Vijaykeerthy, IBM Research, Bangalore, INDIA, Fifth International Conference on ‘Big Data Analytics 2017’, International Institute of Information Technology (IIIT, Hyderabad), December 13, 2017

- Visited and had discussions with department chairs, deans, faculty members of US universities – Olin College of Engineering, University of Massachusetts Lowell– Lowell, Northeastern University, Boston University, Massachusetts Institute of Technology (MIT), Wright State University, Ohio State University, Carnegie Mellon University, Rutgers University, New York University, North Carolina State University, University of Maryland – College Park during October 23 to November 7, 2017 to initiate faculty recruitment, exchange programs and academic and research collaboration with Universities.
- Expert Talk on ‘Interactive Classrooms’, Faculty Orientation Program, Pandit Deendayal Petroleum University, Gandhinagar, India, June 14, 2017
- Expert Talk on ‘Teaching Pedagogy’, Faculty Induction Programme at Nirma University, June 13, 2017
- Olin Partners Conveying Meeting, Olin College of Engineering, USA, June 14-15, 2016
- Plenary talk, Chaudhary S., “Big Data Analytics in Agriculture”, International Conference on Statistics & Big Data Bioinformatics in Agricultural Research”, ICRISAT, Patancheru, AP, India, November 22, 2016, <http://isas70.icrisat.ac.in/>
- Expert Talk, ‘Making Classroom Interactive’, Induction Training Program for faculty members, Nirma University, May 31, 2016
- Keynote talk, ‘Data Analytics : Technologies, Current Trends and Research Opportunities’, National Conference on ‘Recent Trends in Computer and Communication Technology – RTCCT 2016’, Sarvajanic College of Engineering and Technology (SCET), Surat, May 10, 2016
- Keynote talk, ‘Data Analysis and ‘R’ Programming’, Short Term Training Program on "Statistical Analysis using R Programming", School of Computer Studies, Ahmedabad University, 7th to 12nd March, 2016
- Invited talk on ‘Big Data Analytics in Agriculture’ and Organizing Secretary and at ‘National Workshop on ‘Information and Communications Technologies (ICTs) for Sustainable Agricultural Development’, organized by 'Indian Association of Information Technology in Agriculture' (IAITA) in collaboration with SardarKrushinagar Dantiwada Agricultural University (SDAU), NAARM, APAARI, Ahmedabad University, Global Forward at SDAU, Global Forward Thinking Platform and Club of Ossiach, Date: Thursday, February 11, 2016
- Chaudhary S., Invited talk on “Enabling Application Development for the Internet of Things” at One Day National Symposium on ‘Internet of Things’, Organized by G H Patel College of Engineering & Technology, Vallabh Vidyanagar, 15th February 2016
- Key note talk on ‘Data Science and Analytics : Technologies and Research Opportunities’ at ‘UGC Sponsored National Workshop on R Language and LaTeX’, Gujarat Vidyapeeth, Ahmedabad, February 18, 2016
- Member, Panel discussion, ‘પુસ્તક વાચન પડદા પર ને પાના પર’, organized by Book Fare, Surat Municipal Corporation, January 28, 2016
- Invited Talks on ‘Internet of Things’ at All India Seminar on IoT organized by Institution of Engineers, Gujarat State Center at Bhaikaka Bhavan on 22nd and 23rd January 2016
- ‘ICT Tools for Education’, Faculty Orientation Programme, organized by Academic Development & Research (ADR) Cell of Nirma University, December 24, 2015
- ‘Recent trends in ICT for Agriculture and Rural Development’, Short Term Training Program on Recent Trends in Communication Engineering organized by Nirma University, December 22, 2015
- Invited talk on ‘Big Data Analytics in Agriculture’, Seventh Workshop on Big Data Benchmarking (WBDB), organized by San Diego SuperComputer Center, University of California, San Diego, at the India Habitat Centre, New Delhi, India, organized in collaboration with the Indian Statistical Institute (ISI), Delhi Centre, and Indian Institute of Public Health (IIPH), Hyderabad, December 14-15, 2015
- ‘Data Analytics and Big Data’, ISTE STTP on ‘Distributed Computing with Conceptual and Practical Approach’ at Dept of Information Technology, Dharmsinh Desai University, October 16, 2015
- Keynote talk on ‘ICT in Agriculture: Current Status and Future Directions’, Conference - ICTCT 2015, Udaipur, October 10, 2015, Organized by CSI Udaipur Chapter, October 10, 2015
- Panel Member, Indo US Roundtable on 'Building Partnerships for Sustainability Solutions', Organized by IIT Delhi, Arizona State University, CEE & Ekam Eco Solutions, at CEE, Oct 19 2015

- "Data Analytics", Research Orientation Programme, Nirma University, June 29, 2015
- 'Innovations of ICT', Summer Innovation School - 2015, organized by SRISTI and AU, June 16, 2015
- 'Social Media for Education', Academic Development & Research (ADR) Cell of Nirma University, June 5, 2015
- 'Telecommunication and ICT : Drivers of Innovation', The Institution of Engineers (India), Gujarat State Centre, May 17, 2015
- 'Data Analytics', Refresher Programme / STTP, Nirma University, May 19, 2015
- Invited Talk, 'વિરત્તર પરિક્રમા અને અનુભવો', Gujarat Vishwakosh Trust, Usmanpura, Ahmedabad, October 8, 2014
- Invited Talk, National Workshop on Exploring Research and its Trends in Computer Science, Department of Computer Science, Gujarat Vidyapeeth, Ahmedabad, September 15 – 19, 2014
- Talk on 'Writing a Research Proposal' at State Level Workshop on 'Research Methodology', organized by AESICS, Ahmedabad University on January 20, 2014
- Talk on 'Green Computing', at 1st Gujarat Vidyapeeth Computer Science Alumni Association, Gujarat Vidyapeeth, January 11, 2014
- Delivered a talk on 'Service-Oriented Architecture for Spatial Data Integration and Spatial Reasoning' at NSDI-2013, organized by IITB, November 29-30, 2013
- Inaugural talk on 'Emerging Topics in Cloud Computing' at a workshop on 'Advanced Computing and Big Data' organized by CHARUSAT on November 21, 2013
- Invited talk at a national Seminar on 'Recent Trends & Issues in Practical Data Mining', organized by CHARUSAT, Changa on October 18, 2013
- Chief Guest and delivered an inaugural talk on 'Data Mining and Knowledge Extraction' at a workshop on Research Scope & Possibilities in Computational Intelligence and Data Mining', CHARUSAT, August 22, 2013
- Delivered an invited talk on 'ICT in Agriculture and Rural Development', Lokbharati Gram Vidyaapeeth, Sanosara, Bhavnagar, India on December 23, 2012
- Delivered a tutorial on 'Cross Enterprise Collaboration' (with Dr. Shivali Agarwal and Hari S Gupta; IBM India Research Lab and Dr. Alex Norta, University of Oulu, Finland) at '3rd International Conference on Services in Emerging Markets', organized at the Infosys Campus, Mysore, December 12-15, 2012
- Delivered an invited talk on 'Cloud Computing and Development of IaaS, PaaS and SaaS' at Nirma University, Short Term Training Program on "Advances in High Performance, Autonomic and Cloud Computing", July 3, 2012
- Member, Panel Discussion on 'Use of Participatory GIS in Urban Planning', India Conference On Geospatial Technologies And Applications (ICGTA-12) organized by GISE Lab, Indian Institute of Technology Bombay, April 12-13 2012, Mumbai, India
- Delivered an invited talk on "Cloud Computing Research at DA-IICT" at 'First Workshop in India on Grid and Cloud Computing' organized by Indian Institute of Technology Bombay, April 2-4, 2012
- Delivered keynote on "Cloud Computing" at the National Conference on "Strategies for Managing Libraries in the Future" jointly organized by Indian Institute of Management, Ahmedabad and INFLIBNET Centre, Ahmedabad, December 7, 2011
- Conducted tutorial on 'Cloud Computing', 46th Annual National Convention of Computer Society of India, December 1, 2011
- Chair, Tutorials, 46th Annual National Convention of Computer Society of India, December 1-3, 2011
- Two days visit to Oracle Headquarters at Redwood Shores, San Francisco, November 17-18, 2011 to interact with Sr. Executives of Oracle Research & Development team to exchange thoughts, inputs, and views regarding information technology adoption in the Indian context.

- Conducted workshop on 'Cloud Computing', at LDRP Institute of Research and Technology, Gandhinagar, Sept 23, 2011
- Talk on 'Web Search and Search Engine', Academic Staff College, Sardar Patel University, Vallabh Vidyanagar, April 14, 2011
- Talk on 'Cloud Computing Concepts and Applications', Center for Environmental Planning and Technology, Ahmedabad, March 29, 2011
- Talk on 'Service-Oriented Computing', Ahmedabad University, February 21, 2011
- Talk on 'Agro-Produce Marketing using Social Network – Twitter', International Conference on “Celebrating 50 Years of Swarnim Gujarat: The Role of Gujarati Diaspora”, North Gujarat University, Patan, January 2, 2011
- Visiting Research Scholar, knoesis research group, Wright State University, Dayton, Ohio, USA during July 1 to Oct 15, 2010
- Participated in group discussions to define recommendations, 'Indo-US Workshop on Parallelism and the Future of High-Performance Computing', IISc, Bangalore, India, January 9-10, 2010, co-located with 15th ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming (PPoPP2010) and The 16th IEEE International Symposium on High-Performance Computer Architecture, IISc, Bangalore, India - January 9-14, 2010
- Presented a research paper written by P. Patel and S. Chaudhary, 'Context Aware Semantic Service Discovery', the Fifth World Congress on Services (Services 2009 part II), Bangalore, India, September 21-25, 2009, ISBN: 978-0-7695-3812-9, pp 1-8
- Presented a research paper written by P. Patel, S. Jardosh, S. Chaudhary, P. Ranjan, 'Context Aware Middleware Architecture for Wireless Sensor Network', Sixth IEEE International Conference on Services Computing (SCC 2009) Work-in-Progress track, Bangalore, India, September 21-25, 2009, ISBN: 978-0-7695-3811-2, pp 532-535
- Invited talk on 'WS* Specifications' and 'Business Process Execution Language (BPEL)', STTP on 'Web Services and Service-Oriented Computing', Nirma University, Ahmedabad, May 28, 2009
- Invited talk at International Conference on “Reconnecting Gujarati Diaspora with its Homeland: Contribution to its Development with a Focus on Building a Knowledge Society” (January 17-19, 2009) Second Conference in the Series of “Global Gujarat and its Diaspora” organized by The UGC Area Study Centre for Indian Diaspora and Cultural Studies, Hemchandracharya North Gujarat University, Patan and Co-sponsored by The NRG Foundation, Government of Gujarat, Gandhinagar
- Presented a Research Poster on 'Agricultural Information System: A Semantic Web Approach', Intel Asia Academic Summit, Taipei, Taiwan, October, Oct 20-22, 2009
- Invited Talk on "New Professionals for Rural India" during a session on "Digital Literacy and Distance Learning", at 5th Convention of Grameen Gyan Abhiyan, New Delhi on, October 4, 2008
- Presented a research paper on "Policy-driven Grid Business Process", Workshop on Grid and Utility Computing (WUGC), Held in conjunction with the International Conference on High Performance Computing (HiPC), Goa, 2007
- Presented a research paper on “Grid enabled Agro Produce marketing System”, eAgriculture INDIA2007 conference, New Delhi, August, 2007
- Presented a research paper on “Integrating Stateful Services in Workflow”, 13th Asia Pacific Software Engineering Conference (APSEC06), December 2006, Bangalore, India
- Presented a research paper on "Semantic and Rules Based Automated Negotiation", 1st International Workshop on Service- and Process-Oriented Software Engineering (SOPOSE), co-located with 2006 Asia-Pacific Conference on Software Engineering (APSEC-2006), December 2006, Bangalore, India
- “Fundamentals of Distributed Computing”, “Grid Computing”, and “Development of Grid Services and Globus Toolkit 4”, two-day intensive workshop on “Service-Oriented Computing” organized by IEEE Gujarat section at DA-IICT during December, 2006

- Delivered an invited talk on “Convergence of Web Services, Grid computing, and Semantic Web”, Workshop on Next Generation Enterprise Architecture: Service Orientated Architecture, Software as a Service, and Web 2.0, organized by TCS Innovation Labs, October 2006, New Delhi, India
- Presented a research paper on "Semantics based Event-driven Publish/Subscribe Service-Oriented Architecture" for a workshop on "Emerging Services delivery platforms and software models for Next Generation Network Services SOFTPLATFORM2006", co-located with "The First International Conference on Communication Systems Software and Middleware (COMSWARE)", January 2006, New Delhi, India
- Presented a research paper on "Non-Uniform Information Dissemination for Performance Discovery in Computational Grids", for a workshop on Utility Grids 2006, co-located with "The First International Conference on Communication Systems Software and Middleware (COMSWARE)", January 2006, New Delhi
- Presented a Research seminar, Department of Computer Science and Large Scale Distributed Information System Lab, Georgia University, July 2005, Athens, USA
- Presented a research paper on “Towards Agricultural Marketing Reforms: Web Services Orchestration Approach”, IEEE International Conference on Services Computing (SCC 2005), July 2005, Orlando, USA
- Presented a research paper on “Architecture of Sensor Based Agricultural Information System for Effective Planning of Farm Activities”, IEEE International Conference on Services Computing (SCC 2004), Sept. 2004, Shanghai, China

ANNEXURE 4

Funded Research Projects

Developing Data Analytics Architecture (Applications in Agriculture)

Funding Organization: Department of Science and Technology, Govt. of India, The Natural Resources Data Management Systems (NRDMS) and National Spatial Data Infrastructure (NSDI)

Funding amount: Rs. 27.51 lacs

Duration: June 2017 – May, 2019

Principal Investigator (PI): Dr. Sanjay Chaudhary

Co-Investigator (Co-PI): Dr. Mehul Raval

Abstract: Geo-spatial data is very important to develop flexible and versatile functions and applications, for developing multidisciplinary applications, helping in planning, managing and utilizing natural resources efficiently using spatial analysis. We need common standards for data integration and effective analytical infrastructure and we aim to use OGC standards for big data processing of spatial data. The core scientific and technological objectives are:

- Development of big data integration and analytical platform built on open source architecture for enrichment of large data sets including geo-spatial data bases. Agriculture will be used as the domain to realize various aspects of proposed architecture.
- Integration with already developed and deployed Decision Support Systems and Spatial Decision Support Systems for an application domain.
- Indexing, querying, analyzing, and visualizing Geo-spatial data at scale using open source.
- To connect structured and unstructured data in real time or batch processing for data management and analytics of systems for decision making in operational environment, e.g. applications like agro advisory system should be able to process event streams in a real time, extract relevant information and identify values that do not follow the general trends.
- Develop and implement distributed algorithm(s) to store and process geo-spatial data.
- Implement advanced data structures to store and process geo-spatial data in an efficient manner.

Title: Developing Data Content Standards for Data Representation, Sharing and Interoperability (Soil, Forest and Surface Geological Map Data)

Funding Organization: NRDMS- NSDI, Dept. of Science and Technology, Govt of India

PI: Sanjay Chaudhary and Co-PI: Mehul Raval

Funding Amount: Rs. 4.34 lakhs (2018)

Duration: Six months

Abstract: It involves study and evaluations for standards for data representation, search for service standards for data acquisition and integration, global XML schema for data and OGC web service development standards. Ontologies for soil, forest and geological maps will be developed for data classification and inferencing. It will help in generation of information regarding accessibility, interoperability and utility of the sharable Soil and Forest data infrastructure.

Projects: 'Big Data Analytics in Agriculture' and 'Real-time Face Recognition System'

Funding Organization: NVIDIA GPU Grants (Quadro processors)

Principal Investigator (PI): Sanjay Chaudhary

Co-PI: Ratnik Gandhi

Service-Oriented Architecture for Spatial Data Integration and Spatial Reasoning

Funding organization: Department of Science and Technology, Govt. of India,
The Natural Resources Data Management Systems (NRDMS) and National Spatial Data Infrastructure (NSDI),
Scheme: Geo-spatial technology based tools development for NSDI

Grant amount: Rs. 35 lacs

Duration: 2011-2014

Principal Investigator (PI): Sanjay Chaudhary (October, 2011 to July, 2013)

Abstract: Geospatial data and services for spatial planning have become very important worldwide. Spatial Data Infrastructure (SDI) has emerged as a platform for geospatial data sharing and dissemination. Today, there are millions of sensors around the globe and they collect huge amount of real time data. Using these sensors, various organizations – Government or private, capture and publish data throughout their own systems or networks. There is lack of integration and communication among these networks or systems, which has intensified the existing problem of too much data and not enough knowledge. Complex application such as flood forecast system requires integration of various geospatial data from different spatial data sources. Large amount of Geospatial data is collected and stored by different agencies using different data formats. With enormous amount of spatial data now available through the Web, ample opportunities exists to integrate these data to support complex applications such as impact of climate change on a crop or flood forecasting system. Geospatial data and service can become extremely useful, if it can be distributed over large networks. Efforts are under way to create an infrastructure for geospatial data sharing. A common and interoperable solution for discovery, storage and access of geospatial data and information has become a necessity. We propose a Semantic web enabled Service-Oriented Architecture for spatial data integration and spatial reasoning. We propose that sensor data to be annotated with semantic metadata to provide contextual information essential for situational awareness. We aim to evaluate and test our proposed architecture for a complex application of ‘agricultural recommendation system’ specifically in the context of climate change and impact on agricultural practices.

Title: Description based person identification in unconstrained surveillance video

PI: Dr. Mehul S Raval

Co-PI: Dr Sanjay Chaudhary

Project Collaborator (PC): Anand Laddha, Scientific Officer, BARC, Trombay

Project Duration: 3 years, (2016 - 2019)

Funding Organization: Board of Research in Nuclear Science (BNRS), Bhabha Atomic Research Centre,
Department of Atomic Energy, Government of India

Funding Amount: Rs. 20.92 Lakhs

Abstract: The goal of the project is to locate a person-of-interest based on specific set of soft biometric attributes from a surveillance video without prior registration. The project will integrate and minimize semantic gap between input image or a video frame and then uses these features to locate a matching individual in the video stream using human descriptions and soft biometric traits. Moreover, it aims at extracting soft biometric features from an input image or a video frame and then uses these features to locate a matching individual in the video stream. This project will add another dimension to surveillance as human cognitive perceptions are used while searching the video streams.

Design and Performance Analysis of Non-parametric Detection algorithm for Cognitive Radio - MIMO Communications

Funding organization: Gujarat Council on Science and Technology (GUJCOST), Department of Science and Technology (DST), Government of Gujarat

Funding Amount: Rs. 4.3 lacs

Duration: 1st June 2016 to 31st May 2018

PI: Dr. Dhaval Patel, SEAS - AU

Co-PI: Dr. Sanjay Chaudhary, SEAS - AU

Abstract: The aim of the project is to develop non-parametric detection algorithm and analyze the performance in a real-time wireless environment. In this project, we focus on the study and Monte-Carlo simulations of a new non-parametric scheme to detect the presence of the primary user without knowing its structure and channel information. The work includes the detailed performance evaluation of non-parametric detection scheme in the actual wireless environment. To achieve this, GNURADIO software and the Universal Software Radio Peripheral (USRP) hardware based wireless test bed will be created to prepare the experimental setup of CR-MIMO (Cognitive Radio – Multiple Input Multiple Output) systems. The project will provide simulations and an experimental performance evaluation of non-parametric detection schemes to provide opportunistic spectrum access in a cognitive radio environment.

Semantic Web based Parser, SPARQL Query Builder and Information Extraction from Social networks

Funding organization: eZDI, USA

Duration: 2012, One year

Principal Investigator (PI): Sanjay Chaudhary

Aim: To develop semantic web based parser, which would take medical transcriptions in different formats as input and convert into RDF format. Query resolution builder should be able to execute users' queries by using domain knowledge and available data. The existing parser is not using the domain knowledge and there is a need to improve the performance of available system by applying the Semantic Web concepts.

Modules developed:

- A Semantic Web based Parser for Cardiology domain (To parse the Transcriptions and extract the information semantically)
- Query Interface development and SPARQL Query Builder (Query Interface and Query Engine to process the user's query)
- Information Extraction module (To extract the information from web-blogs and from different social network sites.)

Microsoft High Performance Computing Faculty Research Grant Program

Funding organization: Microsoft

Grant amount: US\$ 5,000

Duration: 2008-09

PI: Sanjay Chaudhary

Goal: To design and develop a cluster solution that allows parallel execution of software components and performs complex calculations on large amounts of data. The cluster should be capable to provide integrated view of complex multi-tier and multi-platform computing environment. A framework to enable negotiation and allocation of resource for effective resource scheduling was developed to realize private cloud based on virtual machines.

Agricultural Information System

Funding organization: DA-IICT

Duration: 2007-08, One and half year

Principal Investigator (PI): Sanjay Chaudhary

Goal: To develop an Information System for the farmers to provide recommendations. Unlike existing information systems this system would not only be able to provide information based on queries of user but would also be able to make inferences on existing knowledge base.

The system aims to develop a decision support system for Agricultural Information System (AIS) which can help the farmer in making proper decisions related to various aspects of the crop cultivation based on the context and prevailing condition of a farming situation. The system should provide expert advice by responding appropriately based on the requirements of a farmer and enable the farmer to make appropriate decisions. Answers to the queries of a farmer will be resolved by using concept based search rather than

keyword based search. These requirements can be achieved by building a system that uses the concepts of Semantic web. Ontology is a central building block of semantic web and ontology can be used to form the knowledge base of the system to enable concept based search. The proposed ontology will be based on AGROVOC, developed by Food and Agriculture organization and it will refer the base concepts of AGROVOC. The proposed ontology will get converted into knowledge base when information (in the form of rules and instances) is added to it by the domain experts. An inference engine will be developed to help in performing inferences and to retrieve the contextual information from the system knowledge base. Such contextual information will enable the user/farmer to make proper decisions about various aspects of the crop production cycle.

Microsoft High Performance Computing Faculty Research Grant Program, 2007

Funding organization: Microsoft
Grant amount: US\$ 5,000
Duration: 2007-08
PI: Sanjay Chaudhary

Goal: To run parallel high performance computing applications to help solve complex computations using Windows Compute Cluster Server 2003. Following three applications were developed using principles of high performance computing:

- “Genomance”
- Dynamic Traffic Congestion Monitoring System
- Global Warming Solution System

Prediction Model for Pest Attack: an Evolutionary Approach

Funding organization: DA-IICT
Grant amount: Rs. 1,80,000
It is a joint research project work with ICRISAT, Hyderabad. Domain modeling and database is provided by the research scientists of ICRISAT.
Duration: 2007-08
PI: Sanjay Chaudhary

Abstract: Genetic algorithms are adaptive search algorithms. These algorithms are based upon the principles of evolution and natural selection. Genetic algorithms are adept at searching large, non-linear search spaces and efficiently determining near optimal solutions in reasonable time frames by simulating biological evolution. In this project, a model for predicting pest attacks on crop is proposed. The model is based on neural network and genetic algorithm is used to train the model for prediction.

Framework for processing and visualization of critical alerts for risk perception and efficient decision-making

Funding organization: IBM Eclipse Innovation Grant 2005
Grant Amount: US\$ 13,000
Duration: 2005-06
PI: Sanjay Chaudhary

Goal: To develop a service computing based framework that supports integration of critical alerts generated by diverse sources, processing, and presentation in user friendly format to aid decision making process.

Project objectives:

- Identification of appropriate algorithms and implementation in the form of set of services that carry out the task of information extraction and processing of unformatted alerts.
- Development of set of services based on OpenGIS 3G standards (Geo-parser, Gazetteer and Geo-coder) for geo-referencing the alerts.
- Development of set of services that publish the Geo-referenced alerts in the form of GIS Layers based on OpenGIS web mapping related standards.

- Development of services to disseminate alerts using RSS-like content delivery mechanism for targeted audiences.

ANNEXURE 5

Member, Program / Organizing Committee, International Conferences and Workshops

2020

- Steering Committee Member, [8th International Conference on Big Data Analytics \(BDA 2020\)](#), December 15 - 18, 2020, Ashoka University, Sonipat, India
- Member, Program Committee, [18th International Conference on Service-Oriented Computing \(ICSOC 2020\)](#), December 14 – 17, 2020, Dubai, (Virtual Conference)

2019

- General Chair, 7th International Conference on Big Data Analytics (BDA 2019), December 17 - 20, 2019, Ahmedabad, India
- Track Chair, INDICON2019, December 13 – 15, 2019, Rajkot, India
- Member, Program Committee, 17th International Conference on Service-Oriented Computing (ICSOC 2019), October 28 – 31, 2019, Toulouse, France
- Member, Program Committee, 16th IEEE International Conference on Services Computing (SCC2019), July 8-13, 2019, Milan, Italy

2018

- Workshop Chair, The Sixth International Conference on Big Data Analytics, National Institute of Technology, Warangal, December 18 - 21, 2018
- Program Committee, 16th International Conference on Service-Oriented Computing (ICSOC 2018), Hangzhou, Zhejiang, China, November 12-15, 2018, <http://www.icsoc.org>
- Member, Program Committee, 15th IEEE International Conference on Services Computing, July 2-7, 2018, San Francisco, CA, USA

2017

- Workshop Chair, Workshop on 'Data Science for Agriculture and Natural Resource Management (DSANRM)' in conjunction with Big Data Analytics 2017 organized at International Institute of Information Technology (IIIT, Hyderabad), December 12, 2017, Hyderabad, India
- Program Committee, 15th International Conference on Service-Oriented Computing (ICSOC 2017), Malaga (Spain), November 13-16, 2017, <http://www.icsoc.org>
- Member, Program Committee, 14th IEEE International Conference on Services Computing, June 25 - June 30, 2017, Honolulu, Hawaii, USA, <http://thescc.org/2017/index.html>

2016

- Member, Program Committee, Workshop on Security Technologies in the World with Internet of Things (IoTSec 2016), In conjunction with Mobiquitous 2016, November 28, 2016, Hiroshima, Japan
- Member, Program Committee, Special session entitled 'Data Science for Agricultural Decision Support Systems (DS4ADSS)' as a part of The 3rd IEEE International Conference on Data Science and Advanced Analytics (IEEE/ACM DSAA), IEEE/ACM DSAA 2016, Montreal, Canada October 17-19, 2016
- Member, Program Committee, 14th International Conference on Service Oriented Computing, October 10-13, 2016, Banff, Alberta, Canada, <https://www.conftool.com/icsoc2016/>

- Member, Program Committee, 13th IEEE International Conference on Services Computing, June 27 - July 2, 2016, San Francisco, USA
- Secretary, Organizing Committee, National Workshop on “Information and Communications Technologies for Sustainable Agricultural Development” organized at Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar (SDAU), February 11, 2016
- Program Committee Member, The Seventh International Conferences on Advanced Service Computing - Service Computation 2016, Rome, Italy, March 20 - 24, 2016

2015

- Workshop Co-Chair, Workshop Session on ‘Big Data Analytics in Agriculture’, Co-located with Seventh Workshop on Big Data Benchmarking (7th WBDB), organized by San Diego SuperComputer Center, UCSD, December 14-15, 2015, India Habitat Centre, New Delhi, India, <http://clds.ucsd.edu/wbdb2015.in>
- Member, Program Committee, 13th International Conference on Service Oriented Computing (ICSOC) 2015, November 16-19, 2015, Goa, India
- Track Chair, 'Systems', Eighth International Conference on Contemporary Computing (IC3) , JIIT, Nodia, India, August 20-22, 2015
- Member, Technical Program Committee, 8th ACM Compute , Oct 29-31, 2015, New Delhi, India
- Member, Program Committee, 12th IEEE 2015 International Conference on Services Computing (SCC 2015) - Research Track, June 27 - July 2, 2015, New York, USA
- Workshop Co-Chair, Workshop on ‘Industrial Internet ’, Co-located with IEEE TENSYP with the theme on Internet of Things (IoT), May 13, 2015, Ahmedabad
- Track Chair, IEEE TENSYP with the theme on Internet of Things (IoT), May 13-15, 2015, Ahmedabad
- Member, Program Committee, The 2nd Workshop on Smarter Planet and Big Data Analytics, co-located with 16th International Conference on Distributed Computing and Networking (ICDCN), January 4-7, 2015, BITS Pilani Goa Campus
- IBMSGs' 2015 (2015 International Summit on Bio-Metrics and Smart Government), January 18-20, 2015, Sousse, Tunisia

2014

- Member, Program Committee, Thirteenth IEEE International Symposium on Signal Processing and Information Technology (IEEE ISSPIT 2014), JIIT, Noida, India, December 15-17, 2014
- Member, Program Committee Third International Conference on Parallel, Distributed and Grid Computing(PDGC 2014), December 11-13, 2014, JUIT, Himachal Pradesh, India
- Member, Program Committee, ACM Compute 2014, VNIT, Nagpur, India, October 9-11, 2014
- Track-Chair, Program Committee, 7th International Conference on Contemporary Computing (IC3), JIIT, Nodia, India, August 7-9, 2014
- Member, Technical Program Committee, 11th IEEE International Conference on Service Computing, June 27 - July 2, 2014, Anchorage, Alaska, USA

2013

- Program Chair, One-day Pre-ICSE workshop on Software Engineering, July 27, 2013, Ahmedabad, India
- 10th IEEE International Conference on Service Computing, June 27-July 2, 2013, Santa Clara Marriott, CA, USA

- Second International Workshop on Natural Language Processing (NLP'12), co-located with International Conference on Advances in Computing, Communications and Informatics (ICACCI-2012), August 22 -25, 2013, Chennai, India
- International Workshop on Mobile Cloud Computing : Data, Management & Security (mCloud 2013), June 03-06 2013, Milan, Italy, In conjunction with 14th IEEE International Conference on Mobile Data Management (IEEE MDM 2013)

2012

- Second World Congress on Information and Communication Technologies (WICT 2012), Trivendrum, India, Oct 30-Nov2, 2011
- 9th IEEE International Conference on Service Computing, June 24-29 2012, Honolulu, Hawaii, USA
- International Workshop on Natural Language Processing (NLP'12), co-located with International Conference on Advances in Computing, Communications and Informatics (ICACCI-2012), August 3 - 5, 2012, Chennai, India
- Member, Program Committee, International Conference on Communication Systems and Network Technology, May 10-14, 2012, Rajkot, India

2011

- World Congress on Information and Communication Technologies (WICT 2011), Innovating ICT for Social Revolutions, Mumbai, India, December 11-14, 2011
- 14th International Conference on Principles and Practice of Multi-Agent Systems, Wollongong, Australia, November 16th -18th, 2011
- 4th International Conference on Contemporary Computing (IC3) , August 8-10, 2011, JPIT University, Noida
- 8th IEEE 2010 International Conference on Services Computing (SCC 2011), July 5-10, 2011, Washington, DC, USA
- International Workshop on Identity: Security, Management & Applications (ID 2011), July 22-24, 2011, Kochi, Kerala, India
- International Conference on Communication Systems and Network Technologies (CSNT-2011) , Mata Vaishno Devi University, June 3-5, 2011, Katra Jammu, India
- ACM Compute 2011, 25th and 26th March, 2011, Bangalore, India

2010

- 13th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA-2010), November 12th -15th, 2010, Kolkata, India
- 7th IEEE 2010 International Conference on Services Computing (SCC 2010), July 5-10, Miami, USA
- WWW2011-WarmUpOne program committee, The First WWW 2011 Warm Up Workshop, 7th January 2010, University of Calcutta
- Asia Modelling Symposium 2010, Kota Kinabalu, Borneo, 26-28 May 2010
- 12th International Conference on Computer Modelling and Simulation (UKSim2010), Cambridge University (Emmanuel College) England, 24 – 26 March 2010
- 1st International Conference on Intelligent Systems, Modelling and Simulation, ISMS2010, Liverpool, UK, 27 - 29 January 2010
- The 6th International Conference on `Social and Organizational Informatics and Cybernetics: SOIC 2010', June 29th - July 2nd, 2010 – Orlando, Florida, USA

2009

- Sixth IEEE Indicon 2009, DA-IICT (Dhirubhai Ambani Institute of Information and Communication Technology), India, 8-20 December 2009
- IEEE Semantic Web Services in Practice (SWSIP) 2009 Workshop, co-located with IEEE Asia-Pacific Services Computing Conference 2009, Biopolis, Singapore, December 7-11, 2009
- Fifth World Congress on Services (SERVICES 2009) Part II, Bangalore, India, September 21-25, 2009
- Second International Workshop on Dynamic and Declarative Business Processes (DDBP 2009), In conjunction with the 13th IEEE International EDOC Conference (EDOC 2009), Auckland, New Zealand, September 2009
- Second International Conference on Contemporary Computing, NOIDA, Indi, August 17-19, 2009,
- Fifth IEEE Congress on Services (SERVICES 2009), Part I, Los Angeles, California, USA, July 6-10, 2009,

- 3rd International Workshop on Web Service Composition and Adaptation (WSCA-2009) held in conjunction with 7th IEEE International Conference on Web Services (ICWS-2009), Los Angeles, CA USA, July 7, 2009
 - Third Asia International Conference on Modelling & Simulation, Bandung 25-26 May, Bali 29 May 2009
 - 11th International Conference on Computer Modelling and Simulation, England, March 25-27, 2009
- 2008**
- First International Workshop on Dynamic and Declarative Business Processes (DDBP 2008), September 17, 2008, Munich, Germany
 - Advances in Semantics for Web services 2008 (semantics4ws'08), Workshop at the Sixth International Conference on Business Process Management(BPM 2008), September 1, 2008
 - Algorithm track of the International Conference of Contemporary Computing (ICCC), held at JIITU, Noida, August 7-8, 2009, India
 - 2nd International Workshop on Web Service Composition and Adaptation (WSCA-2008), Special Theme: Dynamic Services Composition and User Steering, held in conjunction with 6th IEEE International Conference on Services Computing (SCC-2008), July 8, 2008, Honolulu, USA
 - International Workshop on Context Enabled Source and Service Selection, Integration and Adaption (CSSSIA2008), Organized with 17th World Wide Web Conference (WWW 2008), April 22, 2008, Beijing, China
 - 10th International Conference on Computer Modelling and Simulation, England, April 1-3, 2008
 - AAAI Spring Symposium, "AI Meets Business Rules and Process Management", March 26–28, 2008 at Stanford University, California, USA
- 2007**
- 5th International Conference on Business Process Management, Brisbane, Australia, September 25-27, 2007,
 - Advances in Semantics for Web services Workshop (semantics4ws'07), in conjunction with the Fifth International Conference on Business Process Management (BPM 2007), September 24, 2007, Brisbane, Australia
 - "Web Services" track of 16th annual World Wide Web Conference 2007 (WWW2007), Organised by the International World Wide Web Conference Committee (IW3C2), May 8-12, 2007, Canada
 - Fourth International Workshop on Semantic Web for Services and Processes (SWSP 07), In conjunction with IEEE International Conference on Web Services (ICWS2007), July 7, 2007, Utah, USA
 - The Doctoral Consortium, in conjunction with the 9th International Conference on Enterprise Information Systems (ICEIS), June 12-16 in Funchal, Madeira, Portugal
- 2006**
- Third International Workshop on Semantic and Dynamic Web Processes (SDWP2006),September 18, 2006, Chicago, USA
 - Advances in Semantics for Web services 2006 (semantics4ws'06) Workshop, to be held in conjunction with the Fourth International Conference on Business Process Management (BPM 2006), Vienna, Austria, September 5-7, 2006
 - "XML and Web Services" track of 15th annual World Wide Web Conference 2006 (WWW2006), Organised by the International World Wide Web Conference Committee (IW3C2), 23-26 May 2006, Edinburgh, Scotland <http://www2006.org/tracks/webservices.php>
 - Fourth International Conference on Business Process Management (BPM 2006), Vienna, Austria, September 5.-7. 2006 Organized by VitaLab, Distributed Systems Group, Institute of Information Systems, Vienna University of Technology, <http://bpm2006.tuwien.ac.at/pc/>
 - First International Workshop on Distributed Applications for B2B Integration (DABI 2006) to be held in conjunction with the 26th International Conference on Distributed Computing Systems (ICDCS) 2006, July 4-7, 2006 - Lisboa, Portugal, <http://dme.uma.pt/jcardoso/Research/Conferences/DABI06/pc.html>
 - Workshop ICWS 2005: Semantic and Dynamic Web Processes, IEEE International Conference on Web Services ICWS'2005, <http://conferences.computer.org/icws/2005/>

Reviewer for Journals

- IEEE Transactions on Services Computing
- Springer Journal of Computing
- CSI Transactions on ICT , Springer
- Future Generation Computer Systems, Elsevier
- The Journal of Internet Services and Applications, Springer
- IEEE Communications Letters, IEEE
- Journal of Parallel and Distributed Computing, Elsevier
- International Journal of Semantic Web and Information Systems, IGI Global
- Journal on Distributed and Parallel Databases, Springer

Honorary Work

- Reviewer, Project Proposals for NRDMS, Department of Science and Technology, Government of India
- Reviewer, Project Proposals for BIRAC, Department of Bio-Technology, Government of India
- Volunteer, Ektra Foundation to promote Gujarati Literature among the readers
- Volunteer, 'Suresh Joshi Sahitya Forum', to organize 'Varta Shibir' for creative short stories
- Chair, Computer Society Chapter of IEEE Gujarat Section, 2015-16, 2010
- Branch Counselor, IEEE Student Branch, DA-IICT, 2008-2009