


University Faculty Details Page on DU Web-site

Title	Prof.	First Name	NAVEEN	Last Name	KUMAR	Photograph
Designation	Professor					
Address	Department of Computer Science					
	University of Delhi					
	Delhi - 110007					
	011-27667591, 27667059, Extn. 102					
Phone No Office						
	66 Raj Nagar, Pitam Pura, Delhi - 110034					
	Residence					
	Mobile					
	nk.cs.du@gmail.com, nk@cs.du.ac.in					
Email						
Web-Page	http://people.du.ac.in/~nk/					
Educational Qualifications						
Degree	Institution				Year	
Ph.D.	Indian Institute of Technology Delhi				1999	
M.Phil./M.Tech.	M.Tech. (Computer Science), Indian Institute of Technology Delhi				1983	
PG	M. Sc. (Mathematics), Indian Institute of Technology Delhi				1981	
UG	B. Sc. (Honors) Mathematics, University of Delhi				1979	
Any other qualification						
Career Profile						

Teaching at Department of Computer Science, University of Delhi since 1983.

Administrative Assignments

Head, Department of Computer Science, 2002-05

Areas of Interest / Specialization

Data Analysis, Deep Learning, Image Analysis, Soft Computing

Subjects Taught

Python Programming, Computational Intelligence, Compiler Design, Automata Theory, Data Structures, Database Management Systems, Systems Programming

Research Guidance
<p><i>Supervision of awarded doctoral dissertations</i></p> <ol style="list-style-type: none">1. Manoj Agarwal. 2014. Multi Robot Coalition Formation in Multiobjective Perspective.2. Anamika R. Gupta. 2012. Lattice based Rule Mining. (jointly with Vasudha Bhatnagar)3. Charu Puri. 2011. Objective Function based Fuzzy Subspace Clustering.4. Arpita Agarwal. Evaluation of Adaptive Hypermedia Systems.5. Ahmed Sultan. 2005. On Quantification of Novelty in Knowledge Discovery Process. (jointly with Vasudha Bhatnagar)6. Shikha Gupta. Community Detection in Social Network: A Quantum-inspired Approach <p><i>Supervision of Doctoral Thesis, under progress:</i></p> <ol style="list-style-type: none">1. Indranath Chatterjee. Identification of Brain Region Affected by Schizophrenia.2. Sonia. Discovery and Evaluation of Process Models from Event Log.3. Himani Sharma. Design and Evaluation of Steganographic Models. (jointly with Prof. R.K. Sharma, I.I.T., Delhi)
Publications Profile
<p>Books</p> <p>Taneja, S., & Kumar, N., Python Programming: A Modular Approach (2018), Pearson Education.</p> <p>Kumar, N., Goel, A., Banati, H., Taneja, S., Badhani, S., Wassan, J.T. & Adlakha M. (2016). IT Tools. Class XI Student Handbook (Information Technology Vocational Course). CBSE. ISBN 978-81-929704-</p>

20-2.

Kumar, N., Goel, A., Banati, H., Saxena, R., Taneja, S. & Malik, S. (2016). Database Management Applications. Class XII Student Handbook (Information Technology Vocational Course). CBSE. ISBN 978-81-929704-20-4.

Kumar, N. (1994), Computer Science Concepts. Galgotia Publications.

Research Papers: Published in Journals

Chatterjee, I.; Agarwal, M.; Rana, B.; Lakhyani, N. & Kumar, N. (2018).

Bi-objective approach for computer-aided diagnosis of schizophrenia patients using fMRI data. *Multimedia Tools and Applications*. IF 1.53, SJR .396

Gupta, S.; Mittal, S.; Gupta, T.; Singhal, I.; Khatri, B.; Gupta, A. K. & Kumar, N. (2017).

Parallel Quantum-inspired Evolutionary Algorithms for Community Detection in Social Networks. *International Journal of Applied Soft Computing*. IF 3.541, SJR 1.308

Puri, C., & Kumar, N (2017). Type-2 Projected Gustafson-Kessel Clustering Algorithm. *International Journal of Computer Applications*, 167(14):1-6.

Agarwal, M., Agrawal, N., Sharma S., Vig L., & Kumar, N. (2015). Parallel Multi-objective Multi-robot Coalition Formation. *Expert Systems with Applications*, 42(21), 7797-7811. IF 1.965, SJR 1.487

Agarwal, M., Kumar, N., & Vig, L. (2014). Non-additive Multi-objective Robot Coalition Formation. *Expert Systems with Applications*, 41(8), 3736-3747. IF 1.965, SJR 1.487

Verma, H., Agrawal, R. K., & Naveen, K. (2014). Improved Fuzzy Entropy Clustering Algorithm for MRI Brain Image Segmentation. *Signal, Image and Video Processing (SIVP)*. IF 1.019, SJR 0.29

Aggarwal, A., & Kumar, N. (2011). SAHAM: Shared Adaptive Hypermedia Application Model. *International Journal of Computer Applications in Technology*, 40(1), 138-145. SJR 0.25

Agarwal, M., Vig, L., & Kumar, N. (2011). Multiple Objective Robot Coalition Formation. *Journal of Intelligent Systems*, 20(4), 395-413. SJR 0.16

Puri, C., & Kumar, N. (2011). Projected Gustafson-Kessel Clustering Algorithm and Its Convergence. *Transactions on Rough Sets XIV*, 159-182.

Bhatnagar, V., Al-Hegami, A. S., & Kumar, N. (2006). Novelty as a Measure of Interestingness in Knowledge Discovery. *International Journal of Information Technology*, 2(1).

Gupta, A., Kumar, N., & Bhatnagar, V. (2005). Analysis of Medical Data Using Data Mining and Formal Concept Analysis. *World Academy of Science, Engineering and Technology*, 11, 61-64. SJR 0.12

Book Chapters: Published

Gupta, S., Taneja, S., & Kumar, N. (2015). Redefining the Classroom: Integration of Open and Classroom Learning in Higher Education. In *Macro-Level Learning Through Massive Open Online Courses (MOOCs)-Strategies and Predictions for the Future*. IGI Global.

Bhatnagar, V., Gupta, A., & Kumar, N. (2009). Algorithms for Association Rule Mining. In *Encyclopedia of Artificial Intelligence*, 76-84. IGI Global.

Gupta, A., Gupta, S., & Kumar, N. (2009). Mining Frequent Closed Itemsets for Association Rules. In Encyclopedia of Artificial Intelligence, 537–546. IGI Global.

Research Papers: Published in Conferences

Kundu, S., Agarwal, M., Gupta, S. & Kumar, N. (2018). Discovering Pareto-optimal Process Models: A Comparison of MOEA Techniques. In ACM *International Conference on Genetic and Evolutionary Computation Conference (GECCO)*, H5-index 31

Gupta, S., Khatri, B., Gupta, T., & Kumar, N. (2015). Accepted for publication. Modified Partition Integration Method for Community Detection in Multidimensional Social Networks. In *International Conference on Natural Computation (ICNC)*. H5-index 16.

Gupta, S., Taneja, S., & Kumar, N. (2014). Quantum Inspired Genetic Algorithm for Community Structure Detection in Social Networks. In ACM *International Conference on Genetic and Evolutionary Computation Conference (GECCO)*, 1119–26. H5-index 31

Gupta, S., & Kumar, N. (2014). GPU-based Massively Parallel Quantum Inspired Genetic Algorithm for Detection of Communities in Complex Networks. In ACM *International Conference on Genetic and Evolutionary Computation Conference (GECCO companion)*, 163–64. H5-index 31

Gupta, S., & Kumar, N. (2014). Parameter Tuning in Quantum-Inspired Evolutionary Algorithms for Partitioning Complex Networks. In ACM *International Conference on Genetic and Evolutionary Computation Conference (GECCO companion)*, 1045–48. H5-index 31

Gupta, A., Kumar, N., & Bhatnagar, V. (2012). Mining of Multi-objective Non-redundant Association Rules in Data Streams. *International Conference on Artificial Intelligence and Soft Computing*, 73–81. Springer, LNCS. H5-index 13

Gupta, S., & Kumar, N. (2012). Higher Education – A Paradigm Shift Towards Integration of Traditional and Online Education. *Academic Congress, University of Delhi*. Delhi.

Agarwal, M., Vig, L., & Kumar, N. (2011). MORCFA: A Multiple Objective Robot Coalition Formation Algorithm. *5th Indian International Conference on Artificial Intelligence (IICAI)*, 268–279. H5-index 6

Agarwal, M., Vig, L., & Kumar, N. (2011). Multi-objective Robot Coalition Formation for Non-additive Environments. *4th International Conference on Intelligent Robotics and Applications (ICIRA)*, 346–355. H5-index 9

Puri, C., & Kumar, N. (2011). Projected Rough Fuzzy c-means clustering. *International Conference on Intelligent Systems Design and Applications (ISDA)*, 530–536. H5-index 15

Gupta, A., Bhatnagar, V., & Kumar, N. (2010). Mining Closed Itemsets in Data Stream Using Formal Concept Analysis. *International Conference on Data Warehousing and Knowledge Discovery*, 285–296. Springer, LNCS. H5-index 14

Kant, S., Kumar, N., Gupta, S., Singhal, A., & Dhasmana, R. (2009). Impact of Machine Learning Algorithms on Analysis of Stream Ciphers. *International Conference on Methods and Models in Computer Science (ICM2CS)*, 251–258.

Kumar, N., Ojha, S., Jain, K., & Lal, S. (2009). BEAN: A Lightweight Stream Cipher. In *2nd ACM International*

Conference on Security of Information and Networks, 168-171. H5-index 11

Kumar, N., & Puri, C. (2009). Projected Gustafson Kessel Clustering. *International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing*, 431-438. Springer, LNCS. H5-index 10

Ojha, S. K., Kumar, N., Jain, K., & others. (2009). TWIS--A Lightweight Block Cipher. *International Conference on Information Systems Security*, 280-291. Springer, LNCS. H5-index 12

Puri, C., & Kumar, N. (2009). A Type-2 Projected FCM. *International Conference on Methods and Models in Computer Science (ICM2CS)*, 1-8.

Agarwal, M., Agrawal, R. K., & Kumar, N. (2006). Identification of Relevant Feature Sets for Multi-class Intrusion Detection Problem. *National Conference on Methods and Models in Computing*, 145-151.

Kumar, N., Gupta, A., & Bhatnagar, V. (2006). Fast Construction of Concept Lattice. *4th International Conference on Concept Lattices and their Applications*, 10, 315-316.

Aggarwal, A., Grover, P., & Kumar, N. (2005). Applying ISO 9126 for Quality Evaluation of Adaptive Hypermedia Systems. *World Conference on Educational Multimedia, Hypermedia and Telecommunications*.

Bhatnagar, V., Al-Hegami, A. S., & Kumar, N. (2005). A Hybrid Approach for Quantification of Novelty in Rule Discovery. *Proceedings of World Academy of Science, Engineering and Technology*, 4, 39-42.

Gupta, A., Kumar, N., & Bhatnagar, V. (2005). Incremental Classification Rules Based on Association Rules Using Formal Concept Analysis. *International Conference on Machine Learning and Data Mining in Pattern Recognition*, 11-20. Springer, LNCS. H5-index 10

Kumar, N., & Narang, V. (2005). Mining Positive and Negative Association Rules Based on Closed Itemsets: An Approach for Generalized Rules. *International Conference on Data Mining (DMIN)*, 104-118. H5-index 8

Al-Hegami, A. S., Bhatnagar, V., & Kumar, N. (2004). Novelty Framework for Knowledge Discovery in Databases. *International Conference on Data Warehousing and Knowledge Discovery*, 48-57. Springer, LNCS. H5-index 14

Mital, N., Kumar, N., & Bhatnagar, V. (2004). Mining Multiple Table Databases With Multiple Minimum Support Constraints. *Data Mining and Knowledge Discovery: Theory, Tools, and Technology*, 190-200.

Narang, V., & Kumar, N. (2004). Mining Fuzzy Conceptual Clusters and Constructing the Fuzzy Conceptual Frame Lattices. *Data Mining and Knowledge Discovery: Theory, Tools, and Technology*, 201-208.

Conference Organization/ Presentations (in the last three years)

Invited Presentations

- Python Workshop for School Teachers at Bal Bharati Public School, Pitampura 2018

- Workshop on 'Data Analytics and Machine Intelligence' at Tribhuwan University, Kathmandu, Nepal during December 11-13, 2017
- Python Workshop for School Teachers at Bal Bharati Public School, Pitampura, 2014
- International Symposium on Software Engineering Education, Paris, 2012

Organizing Chair/Convener:

- International Conference on Big Data Analytics (BDA), 2015
- Python Workshop for School Teachers, 2014
- International Conference on Big Data Analytics (BDA), 2012
- International Conference on Management of Data (COMAD), 2006
- International Conference on Very Large Data Analytics and Machine Intelligence" at Tribhuwan University, Kathmandu during December 11-13, 2017 a Bases (VLDB)- Database Workshop, 2006
- International Database Engineering and Applications Symposium (IDEAS), 2006

Research Projects (Major Grants/Research Collaboration)

To study the problems of process mining in event logs, community detection in social networks, integration of online and classroom learning in higher education, cryptographical and stegnographical approaches

Position: Leading Proposal Author: R & D Doctoral Research Program

Funding Agency: University of Delhi

Period: 2015- 2016

Research Grant: Rs. 1,50,000

Status: Completed

To study the problems of conference ranking in citation networks and community detection in social networks

Position: Leading Proposal Author: R & D Doctoral Research Program

Funding Agency: University of Delhi

Period: 2014- 2015

Research Grant: Rs. 1,10,000

Status: Completed

To explore variants of evolutionary algorithms in various domains like social networks, robotics, and image processing

Position: Leading Proposal Author: R & D Doctoral Research Program

Funding Agency: University of Delhi

Period: 2013- 2014

Research Grant: Rs. 2,50,000

Status: Completed

To explore quantum-inspired algorithms for community detection in social networks

Position: Leading Proposal Author: R & D Doctoral Research Program

Funding Agency: University of Delhi

Period: 2012- 2013

Research Grant: Rs. 1,20,000

Status: Completed

Application of multi-objective evolutionary approaches and rough set theory in data mining, design and implementation of projected clustering algorithm

Position: Leading Proposal Author: R & D Doctoral Research Program

Funding Agency: University of Delhi

Period: 2011- 2012

Research Grant: Rs. 1,10,000
Status: Completed

Application of multi-objective evolutionary approaches and rough set theory in data mining, design and implementation of projected clustering algorithm

Position: Leading Proposal Author: R & D Doctoral Research Program
Funding Agency: University of Delhi
Period: 2010- 2011
Research Grant: Rs. 1,00,000
Status: Completed

Awards and Distinctions

I have been a recipient of National Science Search Talent Scholarship and M. Tech. Scholarship, apart from being recipient of merit scholarship at primary and middle school stage

Association With Professional Bodies

- Senior Member: Computer Society of India
- Member: ACM
- Fellow: IETE

Member Program Committee

- International Conference- Confluence - The Next Generation Information Technology Summit, 2014
- International Conference on Big Data Analytics (BDA), 2014 (Also, Co-chair, Tutorials)
- International Conference on Big Data Analytics (BDA), 2013 (Also, Co-chair, Publicity and Proceedings)
- IBM-Collaborative Academia Research Exchange (I-CARE), 2013
- International Conference on Big Data Analytics (BDA), 2012
- World Conference on Nature and Biologically Inspired Computing (NaBIC), 2011
- IBM-Collaborative Academia Research Exchange (I-CARE), 2010
- International Conference on Management of Data (COMAD), 2006
- International Database Engineering and Applications Symposium (IDEAS), 2006

Reviewing Assignments

- Journal of Indian Business Research, 2018
- International Conference on Big data Analytics, 2015, 2016, 2017, 2018

Other Activities

M.Sc.(Computer Science) Projects Completed

- Neha Gupta and Sonam Sonali. Sentiment Analysis of Citation Contexts, Major Project, Semester IV, 2015-2016
- Neha Gupta and Sonam Sonali. Conference Ranking, Minor Project, Semester III, 2015-2016
- Barkha Khatri. Community Detection in Multidimensional Networks, Major Project, M.Sc. Semester

IV, 2014-2015.

- Tamanna Gupta. Conference Ranking Using Eigenfactor and SJR2, Major Project, M.Sc. Semester IV, 2014-15.
- Isha Singhal, Stuti Mittal. Community Detection in Social Networks: A CUDA Implementation, Major Project, M.Sc. Semester IV, 2014-2015.
- Isha Singhal, Stuti Mittal. Genetic Algorithms for Community Detection in Social Networks: Parameter Tuning, Minor Project, M.Sc. Semester III, 2014-2015.
- Tamanna Gupta, Barkha Khatri. QIEA for Community Detection in Social Networks, Minor Project, M.Sc. Semester III, 2014-2015.
- Archi Mittal, Swati Gogia. Community Detection in Complex Networks Using Quantum-inspired Evolutionary Algorithms, Major Project, M.Sc. Semester IV, 2013-2014.
- Archi Mittal, Swati Gogia. Community Detection in Complex Networks using Genetic Algorithms, Minor Project, M.Sc. Semester III, 2013-2014.
- Sheetal Taneja. Community Detection in Large Complex Networks, Major Project, M.Sc. Semester IV, 2012-2013.
- Monica Bisla, Ankit Tripathi. Facility Location Problem, Major Project, M.Sc. Semester IV, 2012-2013.
- Ankit Tripathi, Monika Bisla, Sheetal Taneja. Quantum Inspired Genetic Algorithm for Community Detection Problem in Social Networks, Minor Project, M.Sc. Semester III, 2012-2013.
- Kritika Shrivastava, Priyamvada Sharma. Application of Machine Learning in Speech Processing, Major Project, M.Sc. Semester IV, 2011-2012.

Signature of Faculty Member