


FACULTY PROFILE (Updated March 2021)

Title & Name (Ms/Mr/Dr/Prof)	Dr. Sapna Varshney	
Designation	Assistant Professor	
Department	Computer Science	
Address (Official)	Kalindi College, University of Delhi, East Patel Nagar, New Delhi - 110005.	
Email	sapnavarshney@kalindi.du.ac.in	

Education

Degree	Institution	Year	Details
B.Sc. (H) Physics	Miranda House, University of Delhi, Delhi	1998	First Division Vth Rank holder in University North Campus
MCA	Banasthali Vidyapith, Rajasthan	2001	First Division Gold Medallist
M. Tech (IT)	University School of Information Technology, GGSIP University, Delhi	2009	First Division
Ph.D. (Computer Science)	Jamia Millia Islamia, New Delhi	2017	“Use of Metaheuristic Optimization Techniques for Automatic Generation of Effective Test Cases”

Career Profile

Organisation/Institution	Designation	Duration	Role
Kalindi College, University of Delhi	Assistant Professor (Full- time Adhoc)	17 Feb 2021 – Till Date	Teaching and Departmental Activities
Delhi College of Arts and Commerce, University of Delhi	Assistant Professor (Guest)	09 Dec 2020 – 16 Feb 2021	Teaching
Department of Computer Science, University of Delhi	Assistant Professor (Full- time Adhoc)	07 Jan 2015 – 07 Dec 2020	Teaching, Research and Administrative Activities
Department of Computer Science, University of Delhi	Assistant Professor (Full- time Adhoc)	14 Aug 2014 – 13 Dec 2014	Teaching
Department of Computer Science, University of Delhi	Assistant Professor (Full- time Adhoc)	02 Sep 2013 – 22 May 2014	Teaching
Tata Consultancy Services, Gurgaon / Greater Noida	Assistant System Engineer	27 Aug 2001 – 25 Jan 2006	Project Coordinator, Software Development

Research Interests/Specialization			
Search based Software Testing, Metaheuristic Optimization Algorithms, Data Mining in Image Processing			
Administrative Assignments / Contribution to corporate life			
Mar 2021 onwards	Departmental assignments at Kalindi College, University of Delhi		
May 2017 – Dec 2020	Member of Website Committee and Cleanliness Committee at Department of Computer Science, University of Delhi		
July 2018 – Dec 2019	Member of Student Skill Development & Activities Committee at Department of Computer Science, University of Delhi		
July 2019 – Dec 2020	Member of Admission Committee at Department of Computer Science, University of Delhi		
2020 - 2021	Nodal officer for Ph.D. Computer Science admissions at Department of Computer Science, University of Delhi		
2019	Curriculum development of (a) B.Sc. (H) Computer Science LOCF 2019 (b) B.Sc. (Phy. Sc./Math. Sc.) LOCF 2019 (c) MCA and M.Sc. Computer Science CBCS 2019		
Aug 2003 – June 2004	Project Coordinator for client at onsite location (USA) while employed with Tata Consultancy Services		
Teaching Experiences (Subject/Courses taught)			
<p>Courses Taught: MCA, M.Sc. Computer Science, B.Sc. (H) Computer Science, B.A. (Prog.) Computer Applications</p> <p>Subjects Taught: Computer Fundamentals, Computer Graphics, Data Mining, E-commerce, Multimedia Systems & Applications, Operating Systems, Software Engineering, Software Quality Assurance and Testing, Systems Programming.</p>			
Research Guidance			
Supervision of M.Sc. Computer Science Minor Project at the Department of Computer Science, University of Delhi for the academic years 2019–2020 and 2020-2021.			
Publication (Peer Reviewed/Indexed Journals)			
Year of Publication	Title	Journal (Name of the journal. Vol Issue ISSN)	Co-Author
2020	Brain Tumor Detection based on Multilevel 2D Histogram Image Segmentation using DEWO Optimization Algorithm	International Journal of E-Health and Medical Communications, IGI Global, Vol. 11, No. 3, pp. 71-85. (E-SCI and SCOPUS)	Co-Author
2019	Automatic data flow class testing based on 2-step heterogeneous process using evolutionary algorithms	Journal of Statistics and Management Systems, Taylor & Francis, Vol. 22, No. 7, pp. 1315-1348. (E-SCI and SCOPUS)	Co-Author
2018	A Hybrid Particle Swarm	Informatica, An International	First and

	Optimization and Differential Evolution based Algorithm for Structural Test Data Generation using Neighbourhood Search Strategy	Journal of Computing and Informatics, Vol. 42, No. 3, pp. 417-438. (E-SCI and SCOPUS)	corresponding author
2016	Search-Based Test Data Generator for Data Flow Dependencies Using Dominance Concepts, Branch Distance and Elitism	Arabian Journal of Science and Engineering, Springer, Vol. 41, No. 3, pp. 853-881. (SCI-E, SCOPUS, and UGC CARE List)	First and corresponding author
2015	An Improved PSO-based Test Data Generator for Data Flow Coverage	International Journal of Applied Engineering Research, Vol. 10, No. 55, pp. 2329-2336. (SCOPUS 2011-2017)	First and corresponding author
2015	A Comparative Study of Automatic Test Data Generation for Data Flow Testing using GA, PSO & BPSO	International Journal of Applied Engineering Research, Vol. 10, No. 55, pp. 2124-2129. (SCOPUS 2011-2017)	Co-author
2014	Automated Software Test Data Generation for Data Flow Dependencies using Genetic Algorithm	International Journal of Advanced Research in Computer Science and Software Engineering, Vol. 4, No. 2, pp. 472-479.	First and corresponding author
2013	Search Based Software Test Data Generation for Structural Testing: A Perspective	ACM SIGSOFT SEN, Vol. 38, No. 4, DOI: 10.1145/2492248.24292277	First and corresponding author

Seminar/Workshop/Conferences Presentation/Organisation

1. S. Varshney and M. Mehrotra, "A Differential Evolution based Approach to generate Test Data for Data-Flow Coverage", In Proc. of the IEEE International Conference on Computing, Communication and Automation (SCOPUS), Noida, India, ISBN: 978-1-5090-1666-2, 29-30 Apr 2016.
2. S. Varshney, N. Rajpal, and R. Purwar, "Comparative Study of Image Segmentation Techniques and Object Matching using Segmentation", In Proc. of the IEEE International Conference on Methods and Models in Computer Science (ICM2CS09), Jawaharlal Nehru University, New Delhi, India, pp. 1-6, ISBN: 978-1-4244-5051-0, 14-15 Dec 2009.

Book / Book Chapters / Books Edited

1. M. Mehrotra and S. Varshney, "Principles and Practices of Software Engineering", Narosa Publishing House, 2016. ISBN: 978-81-8487-508-9

Workshop / Seminar / Conference Organized

1. Organized and participated in Workshop on “Deep Learning with Tensor Flow” at Department of Computer Science, University of Delhi, Delhi, India on February 28, 2019.
2. Organized and participated in Workshop on “मेरा स्वच्छ कार्यस्थल - साथी हाथ बढ़ाना (एक कदम स्वच्छता की ओर)” at Department of Computer Science, University of Delhi, Delhi, India on January 09, 2018.

FDP / Workshops / Courses / Trainings Attended

1. Participated in one-week online FDP on "Machine Learning Application in Image Processing" organized by Department of Computer Science & Engineering, Indira Gandhi Delhi Technical University for Women (IGDTUW), Delhi, India from Nov 23 – Nov 27, 2020.
2. Participated in Workshop on “Computational Intelligence (NWCi-2019)” organized by Department of CSE, Jaypee Institute of Information Technology, Noida, India from April 26 – April 27, 2019.
3. Participated in FDP on “LaTeX & SciLab” organized by Delhi University Computer Centre, University of Delhi, Delhi in collaboration with Spoken Tutorial, IIT Bombay, India on February 20, 2019. 8. Participated in Author Workshop on “How to Write and Publish Scholarly Articles” jointly organized by Dr. Zakir Husain Library, Jamia Millia Islamia and Springer Nature at Jamia Millia Islamia, New Delhi, India on August 24, 2017. 9. Participated in Workshop on “Network Analytics and Support Vector Machines & Applications” organized by the Department of Computer Science, University of Delhi, Delhi, India on April 10, 2015. 10. Participated in Workshop on “Search Based Software Testing” co-located with 36th International Conference on Software Engineering, Hyderabad, India, May 31 - June 7, 2014.
4. Trainings on Software Quality - PCMM Awareness, CMM Awareness, Defect Prevention and Causal Analysis – at Tata Consultancy Services from 2001 – 2002.

Awards & Distinctions

1. Qualified UGC-NET (2013) in Computer Science.
2. National Merit Scholarship for B.Sc. (H) Physics (University of Delhi) by MHRD, Govt. of India.
3. Gold Medal for securing First Rank in MCA (Banasthali Vidyapith).

University Service / Consulting Activity / Resource Person

1. Resource person for e-content development support for the two-week online FDP on "Managing Online Classes and Co-Creating MOOCs" organized by Ramanujan College, University of Delhi, Delhi, India from April 20 – May 06, 2020.
2. Program Committee member in international conferences published by IEEE - ICCIS 2021, Confluence 2021, Confluence 2020, Confluence 2019, REDSET 2019, and ICEIL 2018.
3. Ad-hoc reviewer for Computer Science books published by CRC Press | Taylor & Francis Group.