Dr. Shikha Badhani née Malik

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Professional Profile

I am an academic professional with 14+ years of combined experience in teaching and research. I also have a year-long experience in the industry. I follow a methodical approach and possess sound academic writing skills coupled with effective verbal communication skills. I strive to create meaningful educational experiences. I am also a skilled mentor who follows a reflective process and uses the difference as a resource in a class of diverse learners. I have demonstrated consistent success in administrative tasks also. I have an outstanding educational background. I have received the prestigious university gold medal twice - at the graduate and postgraduate level. I am an active researcher with papers published in peer-reviewed academic journals and reputed conferences. Also, a knowledge disseminator and a continuous learner. My main area of interest is security. The title of my Ph.D. thesis is "Techniques for Android Malware Detection" in which my prime objective was to develop novel techniques and extract novel features for detecting Android malware more accurately.

Experience

Nov 2010 - Present

Assistant Professor (Permanent)
Department of Computer Science, Maitreyi College
University of Delhi, India
Subjects taught at undergraduate level - Information Security & Cyber Laws, Python Programming, Data Structures, Data Analysis and Visualization using Python, IT Fundamentals, Computer System Architecture, Database Management Systems, Operating Systems, Data Handling Using Spreadsheets, Word Processing & Presentation.
Institutional Service
- Convener of 'Atharvan' - Skill Development Centre, Maitreyi College
- Teacher-in-Charge of Deptt. of Computer Science (Mar 11, 2024 onwards)
- Member of the New Website Design Committee 2023
- Value Added Courses Nodal Officer - Maitreyi College 2022 onwards
- Member - Departmental Research Committee (DRC), Deptt. of Computer Science 2022-24
- Convener of the C5 Criterion of the NAAC SSR Accreditation 2021 with a team of 30 Faculty members.
- Several times appointed as External and Internal Examiner for conducting practical examinations.
- Paper evaluator and paper setter for various computer science subjects.
- Teacher-In-Charge of the Dept. of Computer Science for the year 2014-15, 2019-20 and 2022-23
- Member - Faculty of Mathematical Science, University of Delhi - Teacher's

category for the term 2020-23.
- Member of Committee of Courses & Studies for Under-Graduate, Dept. of Computer Science, University of Delhi for the term 2019-21.
- Teacher Representative in the Governing Body of Maitreyi College for the year 2020-21.
- Member of various committees such as Admissions/Time Table/Computerization Committee
- Member of various committees for CAS promotion and screening.
- Actively involved in the organization of college fest, placement activities and short-term courses (2011-12,2012-13), cultural committees such as Indian Dance, Western Music, Photography
- Member of the Advisors of Student Union for the academic year 2013-14.
- Member of the college NAAC committee and actively involved in the process of accreditation.

Aug 2009 - Nov 2010 **Assistant Professor (ad-hoc)**
Department of Computer Science, Hansraj College
University of Delhi, India
- **Subjects taught** at under-graduate level - Computer System Architecture, Microprocessor, Digital Electronics
- Involved in various activities such as making time table, field trip of students etc.

Aug 2010 - Nov 2010 **Guest Faculty**
Department of Computer Science
University of Delhi, India
- **Subject taught** at Postgraduate level – Computer System Architecture

Jun 2008 – Jul 2009 **Software Engineer**
Aricent Technologies, Gurgaon, India
- Handled the coding and testing of the event management module of the Tellabs Project

Education

2014 - 2020 **Ph.D.**
Department of Computer Science, University of Delhi, India
Thesis Title: *"Techniques for Android Malware Detection"*
2005 - 2008 **Master in Computer Applications (MCA)**
Department of Computer Science, University of Delhi, India
University Gold Medalist for securing First Rank in the University
2002 - 2005 **Bachelor of Science (B.Sc) (Hons) Electronics**
Hansraj College, University of Delhi, India
University Gold Medalist for securing First Rank in the University

Certifications

Jun 2008   **UGC NET** (University Grant Commission National Eligibility Test)
Jan – Apr 2015   **Machine Learning** (through Coursera)
Jan – Apr 2024   **Introduction to IoT** (NPTEL) **(Course Topper)**

Co-Supervisor

Co-supervising a Ph.D student at Dept. of Computer Science, University of Delhi in the area of Information Security.

Projects Mentored

I have mentored the following projects:

- **Jul-Dec 2015**   Minor Project (3 Students)
  M.Sc Computer Science at Department of Computer Science
  University of Delhi, India
  Title: "*Android Malware Detection*"
- **Jan-May 2016**   Major Project (3 Students)
  M.Sc Computer Science at Department of Computer Science
  University of Delhi, India
  Title:"*Static Analysis of Android Malware Using Machine Learning Classifiers*"
- **Jul-Dec 2018**   Minor Project (2 Students)
  M.Sc Computer Science at Department of Computer Science
  University of Delhi, India
  Title: "*Digital Currency*"
- **Jul-Dec 2018**   Minor Project (3 Students)
  M.Sc Computer Science at Department of Computer Science
  University of Delhi, India
  Title: "*Audio Steganography*"
- **Jan-May 2019**   Major Project (2 Students)
  M.Sc Computer Science at Department of Computer Science
  University of Delhi, India
  Title: "*Process Mining and Security*"
- **May-Jul 2019**   Summer Internship Programme (4 students)
  B.Sc Physical Science with Computer Science at Maitreyi College
  University of Delhi, India
  Title: "*Lexicon-Based Sentiment Analysis of Text Data*"
- **May-Jul 2020**   Summer Internship Programme (4 students)
  B.Sc Physical Science with Computer Science at Maitreyi College
  University of Delhi, India
  Title: "*Skittles-An online shopping website*"
- **Apr-Jun 2021**   Summer Internship Programme (2 students)

		B.Sc (H) Mathematics at Maitreyi College
		University of Delhi, India
		Title: "*IoT-Based Smart Farming for Sustainable Agriculture in India*"
●	May-July 2022	Summer Internship Programme (3 students)
		B.Sc Physical Science with Computer Science at Maitreyi College
		University of Delhi, India
		Title: "*Lexicon-Based Sentiment Analysis of Indian Tweets during Covid-19*"
●	Jan 2023-Feb 2024	Annual Research Project (2 students)
		BA Prog with Computer Science at Maitreyi College
		Title: *"Blockchain & Cryptocurrency*"

Publications

Journal

- Badhani, Shikha, and Sunil K. Muttoo "Evaluating Android Malware Detection System Against Obfuscation and Stealth Techniques." International Journal of Digital Technologies 2.2 (2023): 19-30.
- Bhardwaj, Manju, Mishra, Priya, Badhani, Shikha, and Sunil K. Muttoo "Sentiment Analysis and Topic Modeling of COVID-19 Tweets of India". International Journal of System Assurance Engineering and Management (2023)
- Badhani, Shikha, and Sunil K. Muttoo "GENDroid-a graph-based ensemble classifier for detecting Android malware." International Journal of Information and Computer Security 18.3-4 (2022): 327-347.
- Badhani, Shikha, and Sunil K. Muttoo "Analyzing Android Code Graphs against Code Obfuscation and App Hiding Techniques." Journal of Applied Security Research 14.4 (2019): 489-510.
- Badhani, Shikha, and Sunil K. Muttoo "CENDroid—A cluster-ensemble classifier for detecting malicious Android applications." Computers & Security 85 (2019): 25-40.
- Badhani, Shikha, and Sunil K. Muttoo "Evading android anti-malware by hiding malicious application inside images." International Journal of System Assurance Engineering and Management 9.2, Springer (2018): 482-493.
- Muttoo, Sunil Kumar, and Shikha Badhani."Android malware detection: state of the art." International Journal of Information Technology 9.1, Springer (2017): 111-117.

Conference Proceedings

- Manchanda, Geetan, Bhumika Papnai, Aadi Lochab, and Shikha Badhani. "IoT-Based Smart Farming for Sustainable Agriculture." In International Conference on Advances in IoT and Security with AI, pp. 27-37. Singapore: Springer Nature Singapore, 2023.
- Muttoo, Sunil Kumar, and Shikha Badhani. "An Analysis of Malware Detection and Control through Covid-19 Pandemic." 2021 8th International Conference on Computing for Sustainable Global Development (INDIACom). IEEE, 2021.
- Badhani, Shikha, and Sunil K. Muttoo. "Comparative Analysis of Pre-and Post-Classification Ensemble Methods for Android Malware Detection." International Conference on Advances in Computing and Data Sciences. Springer, Singapore, 2018.

Book Chapter

- Aditi Goyal, Bhumika Papnai, and Shikha Badhani. "Through the Looking Screen: Reinventing the Student-Teacher Ecosystem", Sustainable Future for Humanity: The New Learning Curve, 2022. 32-41.
- Badhani, Shikha, and Sunil K. Muttoo. "Android Malware Detection Using Code Graphs." System Performance and Management Analytics. Springer, Singapore, 2019. 203-215.

Books
- Contributed to the Content Creation of the book titled Information Technology, published by Universities Press, in 2013.
- Co-Author of the book "Database Management Applications", Class XII Standard Handbook, -CBSE, ISBN: 978-81-929704-20-4.
- Co-Author of the book "IT Tools Level-3", Class XI Standard Handbook CBSE, ISBN: 978-81-929704-20-2.

E-Lessons
- E-lesson created for ILLL – Basic Computer Organization, Programming Fundamentals, https://vle.du.ac.in/pluginfile.php/1828/mod_resource/content/0/Basic%20Computer%20Organization.pdf
- E-lesson created for ILLL - Input-Output Organization, Computer System Architecture, https://vle.du.ac.in/pluginfile.php/1831/mod_resource/content/0/Input%20Output%20Organization.pdf

Paper Presentations /Speaker

- Presented a paper titled: IoT-based smart farming for sustainable agriculture in the International Conference on Advances in IoT, Security with AI held on 24-25 March 2023 at DDU college, University of Delhi
- Speaker for the session titled "Pre- and Post-COVID Era - Internationalisation of the educational ecosystem" at the conference - The Future of Higher Education and Research Cooperation on 18th October 2021 organized by the German Academic Exchange Service (DAAD) in collaboration with the Association of Indian Universities (AIU).
- Presented a paper titled: An Analysis of Malware Detection and Control through Covid-19 pandemic at 8th International Conference on Computing for Sustainable Global Development (INDIACOM-2021) organized by BVICAM, New Delhi from 17th to 19th March 2021.
- Presented a paper titled: Through The Looking Screen: Reinventing Student-Teacher Ecosystem at "International Interdisciplinary e-conference on "Sustainable Future for Humanity: The new Learning curve" organized by Maitreyi College, University of Delhi, India on 24 Feb 2021 and won the Best Oral presentation.
- Participated in a Poster Session and presented a paper entitled - "Lexicon based Sentiment Analysis of Text Data" in NAAC sponsored National Seminar on "Assessment and Accreditation of Best practices in Higher education institution under NAAC framework" organized by IQAC, Maitreyi College on November 5-6, 2019.
- Chaired a session on "Advanced Computing" of the 2nd International Conference on Advances in Computing and Data Sciences (ICACDS-2018) held on 20-21 April 2018 at Uttaranchal University Dehradun, India.
- Presented a paper titled: Comparative Analysis of Pre- and Post- Classification Ensemble Methods for

Android Malware Detection at 2nd International Conference on Advances in Computing and Data Sciences (ICACDS-2018) held on 20-21 April 2018 at Uttaranchal University Dehradun, India.
● Presented a paper at Joint International Conference on Interdisciplinary Research & 8th International Conference on Quality, Reliability, Infocom Technology and Business Operations held on 8-10 Feb 2017 at Amity University Noida, India.

Resource Person /Convener

● Convener of the talk on Generative AI organized on April 19, 2024 by the Deptt. of Computer Science, Maitreyi College
● Course Coordinator & Resource person for 30 Hr Certificate course on "ICT Tools & Applications" organized by the Dept. of Computer Science from 3-15 Oct 2022, from 3-16 Jan 2023, from 3-16 Oct 2023.
● Convener of the National Online workshop on "Different Dimensions of Data Analytics" organized by Illustrado, the Computer Science Society of Maitreyi College on 30th Aug 2022.
● Convener of the online session on "Cybersecurity" organized by Illustrado, the Computer Science Society of Maitreyi College in collaboration with CERT-In on 6th July 2022.
● Convener of the power seminar on "Employability Skills for the Future" organized by the Department of Computer Science, Maitreyi College, University of Delhi in collaboration with the ICT academy on 18th September 2021
● Member, Organizing Committee of the National Webinar on "Machine Learning and it's Applications" on 21 August 2021, organized by Department of Computer Science, Maitreyi College, University of Delhi.
● Resource person for One Week National Faculty Development Programme on "Digital Pedagogy to Enhance Teaching & Learning Experience" organized by Maitreyi College in association with GAD-TLC, SGTB Khalsa College, under MOE Govt. of India (PMMMNMTT) from 15 - 21 December, 2020.
● Resource person for 4-week Faculty Training Program on Google Applications organized by Dept. of Computer Science, Maitreyi college from 16 July - 14 Aug 2020.
● Co-convener of the 4th International Conference on Advances in Computing and Data Sciences (ICACDS-2020) held on 24-25 April 2020 at Valletta, Malta.
● Resource person in the "Computer Workshop on Spreadsheet Handling" organized under the aegis of IQAC, Maitreyi College held from 22-24 May 2019.
● Convener as well as Resource person in TechnoUpdate 1.1- Online workshop on Google Drive & Sheets held on 11-12 May 2020 for the Non-Teaching Staff of Maitreyi College.
● Convener as well as Resource person in TechnoUpdate 1.0- Workshop on Google Drive held on 29 Jan 2020 for the Faculty of Maitreyi College.
● Resource person in the "Computer Workshop on Document Creation and Handling" organized under the aegis of IQAC, Maitreyi College held from 18-21 December 2018.

Awards and Recognitions

● Best oral presentation award at "International Interdisciplinary e-conference on "Sustainable Future for Humanity: The new Learning curve" organized by Maitreyi College, University of Delhi, India on 24 Feb 2021 for the paper titled: Through The Looking Screen: Reinventing Student-Teacher Ecosystem.

- Received a Certificate of Recognition for displaying highly planned and methodical approach for development in modules at Aricent Technologies Ltd.
- Received Team Award for extraordinary excellence, dedication, commitment and excellent delivery and acceptance of the project at Aricent Technologies Ltd.
- Received Madan Mohan Memorial Gold Medal from University of Delhi for securing first rank in the MCA examination (2005-2008) in the university.
- Received University Gold Medal from University of Delhi for securing first rank in the B.Sc(H) Electronics examination (2002-2005) in the university.
- Received Gold Medal from Hansraj College for ranking first in all 3 years of Graduation in B.Sc(H) Electronics.
- Received All India Post Graduate Scholarship for 3 years from University of Delhi on the basis of merit.
- Received "Smt. Shakuntala Devi Ram Narayan Aarya Scholarship" from Hansraj College.
- Awarded by Akhil Bhartiya Vidhyarthi Parishad on women's day for academic excellence.
- Received "Sh. Vijay Kumar Malhotra Prize" from college for academic excellence.
- Received a medal on Mahatma Hansraj Diwas for securing first position in the university.

Faculty Development/ Orientation/ Refresher/ Workshops/ Webinars Attended

- Completed the NEP 2020 Orientation and Sensitization programme under the MM-TTP of UGC organized by CPDHE (UGC-MMTTC) University of Delhi from 5-14 December 2023.
- Participated in the Faculty Development Program on Cybersecurity, High Performance Computing, AI/ML, and GenAI organized by DUCC, University of Delhi from October 4-6, 2023.
- Participated in Workshop on "e-Filing of Income Tax" on 28th July 2023, organized by the Department of Computer Science in collaboration with Department of Commerce and Department of Economics, Maitreyi College, University of Delhi, India
- Participated Online in the Post-PhD: Research, Academia and Industry Opportunities, Science Journalism, Grant writing and Networking (PRAYOJAN) from April 22-23, 2023 organized by INYAS.
- Participated in Online quiz on "Cyber Hygiene Practices" organized by MeiTy, Govt of India, CDAC Hyderabad as part of ISEA Project Phase-II on 19 Jan 2023
- Attended a special lecture on "Well Being is a Skill" by Prof. Richard Davidson on Dec 7, 2022 at Maitreyi College.
- Completed One week FDP on "MOOCS And E-Content Development" organized by Shivaji College in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College from 23-29 November 2022.
- Contributed Art Work to the International Virtual Art Exhibition (Art from the Heart 2.0) organized by Maitreyi College on Oct 8, 2022.
- Participated in a Course workshop on "Digital Empowerment" organized by Value Added Courses Committee in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College on Oct 19, 2022.
- Participated in National webinar on Cardiovascular Diseases and Diet organized by Health & Hygiene committee and Enabling unit, Maitreyi College on Oct 15, 2022.
- Participated in the "ISEA Virtual Presentation Conclave (IVPC-2022) conducted by IIT Guwahati (ISEA Project Ph-2, MeitY), Govt. of India on 23 June 2022.
- Participated in the Online Workshop in pursuance of NEP 2020 on the topic "National Skills Qualifications Framework (NSQF)" held on 27 June 2022.

- Participated in the National Webinar on "AI & NLP: Past, Present, and Future" on 28 February 2022 organized by the Department of Computer Science, Maitreyi College, University of Delhi.
- Attended 14th Annual Conference - COMPUTE 2021 held at Deptt of Computer Science, University of Delhi from 18-20 Nov 2021.
- Participated in RBCDSAI DAI Bootcamp-XAI edition organized by Robert Bosch Centre for Data Science and Artificial Intelligence IIT Madras from 24-28 Aug 2021.
- Successfully completed Online Two-Week Refresher Course in Computer Science on the theme "Next Generation Technologies" conducted by the TLC, Ramanujan College, University of Delhi sponsored by Ministry of Education (PMMMNMTT) from 29 June - 13 July 2021.
- Participated in an online pilot workshop on "Video Editing using Blender" on 26 June 2021 organised by the Teaching Learning Centre (ICT) at IIT Bombay.
- Successfully completed Online One-Week Faculty Development Programme on "Data Analysis using R" conducted by the TLC, Ramanujan College, University of Delhi sponsored by MHRD (PMMMNMTT) from 15 - 21 June 2021.
- Successfully completed the requirements of the workshop on "SAFE Tool for Online Exams" conducted on Jun 19, 2021 by IIT Bombay.
- Participated in an online pilot workshop on "Freeplane" on 5 June 2021 organised by the Teaching Learning Centre (ICT) at IIT Bombay.
- Attended a national webinar on "COVID-19 and Relevance of CT Scan" organized by the Dept. of Zoology, Maitreyi College on 23 May 2021.
- Participated in the Training Workshop for Summer Internship Programme 2020-21 organized by Centre for Research, Maitreyi College on 20 May 2021.
- Participated in one day International Webinar on "IPR-A tool to prevent inventions & creations" organized by Research Cell in association with IQAC Nirmala Memorial Foundation College of Commerce & Science, Mumbai on 8 January 2021.
- Participated in National Webinar on "Online Teaching-Learning & Eye Care" organized by Health & Hygiene Committee, Maitreyi College on 6 Sept 2020.
- Attended International Webinar Session on "Network Based Approaches to explore biological data" organized by Dept. of Computer Science, Maitreyi College on 24 July 2020.
- Successfully completed One Week Faculty Development Programme on "Open-Source Tools for Research" conducted by the TLC, Ramanujan College, University of Delhi sponsored by MHRD (PMMMNMTT) from June 8 - 14, 2020.
- Successfully completed Two Weeks Faculty Development Programme on "Managing Online Classes and Co-Creating MOOCs:2.0" conducted by the TLC, Ramanujan College, University of Delhi sponsored by MHRD (PMMMNMTT) from May 18 - June 3 2020.
- Participated in the Webinar on "How to write research papers" organized by ICT academy on 29 May 2020.
- Participated in the webinar on Expert Advice for Early Career Researchers organized by ACS Publications - ACS Guide to Scholarly Communication held on 27 May 2020.
- Successfully completed the 'Effective and Efficient Online Teaching in the Age of Corona, A Hands On Workshop' on 23 May 2020 organised by the Teaching Learning Centre (ICT) at IIT Bombay.
- Participated in the Online Super Session on "Personal Financial Management" expert session by CA. V Pattabhi Ram conducted on 20 May 2020 (5:00 pm - 6:30 pm) by ICT Academy.
- Participated in National Webinar on "Plagiarism: Issues and Challenges" held on 15th May, 2020 through Google Meet organized by Maitreyi College.
- Participated in a Webinar on "AI in Healthcare" held on 5th May, 2020 organized by Springer Nature.

- Participated in a refresher course in "Computer Science and Information Technology" from 16 September - 28 September 2019 organized by UGC-HRDC JNU
- Successfully completed the Faculty Development Programme on "Personality Development" organized by Department of Computer Science, Maitreyi College in collaboration with ICT academy, held from 23-25 July 2019.
- Participated in the International Workshop on "Emerging Trends in IoT and Machine Learning" held at South Asian University, New Delhi from 4-5 May 2019.
- Participated in a one-week Faculty Development Programme on "Network Science: Foundation of Social Network Analysis" conducted by the TLC, Ramanujan College, University of Delhi in collaboration with Department of Computer Science, University of Delhi from 3-8 December 2018.
- Attended workshop on "Cyber Security" organized by Deen Dayal Upadhaya College, University of Delhi in Apr 2018.
- Attended UGC sponsored National workshop on "A trend towards Machine Learning: Techniques and Applications" organized by Deen Dayal Upadhaya College, University of Delhi in Dec 2017.
- Participated in Author Workshop on "How to Write and Publish Scholarly Articles" jointly organized by Dr. Zakir Husain Library, JMI & Springer Nature held at Jamia Milia Islamia, Delhi in Aug' 2017
- Attended a one-day workshop in the Deptt. Of Computer Science, University of Delhi on Network Analysis in April 2015.
- Participated in the Refresher Course – Computer Science organized by CPDHE, University of Delhi in December 2014.
- Actively participated in organizing UK-India Education and Research Initiative - Study India Programme (UKIERI-SIP) 2014 in Maitreyi College.
- Attended workshop on Foundation Course – Information Technology organized by CPDHE, University of Delhi in May 2013.

Research Areas

Explainable AI, IoT Malware, Android Malware, Machine Learning, Information Security, Sentiment Analysis, Generative AI

Professional Societies

WiCyS – Women in Cybersecurity Member

Professional Service

- Co-convener of the 4th International Conference on Advances in Computing and Data Sciences (ICACDS-2020) held on 24-25 April 2020 at Valletta, Malta.
- Co-convener of the 3rd International Conference on Advances in Computing and Data Sciences (ICACDS-2018) held on 12-13 April 2019 at IPEC Ghaziabad, UP, India.
- Reviewer for the International Journal of System Assurance and Engineering Management, Springer
- Reviewer for the International Journal of Information Security & Privacy, IGI Global

- Sub Reviewer for The Eighth International Conference on Big Data Analytics (BDA 2020)