Faculty Profile

Name : Dr. Anupama Kaushik

Designation : Associate Professor

Qualifications : PhD(CSE), M.Tech(IT), B.E(CSE)

Phone : 011-25528117 Extn: 131

Email : anupama@msit.in

Area of Interest/Specialization: Software Cost Estimation

Neural Networks

Optimization Techniques

Educational Qualifications

1. Second PhD Computer Science on "Intelligent Computing for Software Cost Estimation Using Agile Methodologies", Indira Gandhi Delhi Technical University, Delhi on 23rd December, 2021.
2. PhD Computer Science on "Software Cost Estimation Based on Soft Computing Techniques", Sharda University, Greater Noida in 2015.
3. M.Tech IT, Tezpur University, Assam in Dec. 2001 .
4. B.E. CSE, Bharathiyar University, Tamil Nadu.

Experience : 19 +years

1. HOD, Department of IT, Maharaja Surajmal Institute of Technology (MSIT), affiliated to Guru Gobind Singh Inderprastha University, Delhi from 20th August 2020-11th July 2022.
2. Associate Professor in Maharaja Surajmal Institute of Technology (MSIT), affiliated to Guru Gobind Singh Inderprastha University, Delhi from 6th June 2017.
3. Assistant Professor in Maharaja Surajmal Institute of Technology (MSIT), affiliated to Guru Gobind Singh Inderprastha University, Delhi from 15th July 2004 to 5th June 2017.
4. Lecturer in Guru Tegh Bahadur Institute of Technology (GTBIT), affiliated to Guru Gobind Singh Inderprastha University, Delhi from 26th July 2003 to 2nd July 2004.

Key Publications

1. Anupama Kaushik, Devendra Kr. Tayal, Kalpana Yadav, Arvinder Kaur, "**Integrating Firefly Algorithm in Artificial Neural Network Models for Accurate Software Cost Predictions**", Vol. 28, Issue 8 pp. 665-688, Journal of Software: Evolution and Process, Indexed in , **Science Citation Index Expanded (SCIE)** , SCOPUS(Elsevier), Publisher: Wiley, ISSN: 2047-7481, **IF:1.305**, June 2016.

2. Anupama Kaushik, Devendra Kr. Tayal, Kalpana Yadav, "**A Comparative Analysis on Effort Estimation for Agile and Non-Agile Software Projects Using DBN-ALO**", DOI 10.1007/s13369-019-04250-6, Arabian Journal for Science and Engineering (AJSE), Vol. 45, pp. 2605-2618, Indexed in **Science Citation Index Expanded (SCIE)**, Scopus, Publisher: Springer, ISSN: 2191-4281, **IF:1.518**, November 2019.

3. Anupama Kaushik, Prabhjot Kaur, Nisha Choudhary, Priyanka, "**Stacking regularization in analogy-based software effort estimation**", Soft Computing .https://doi.org/10.1007/s00500-021-06564-w Indexed in, **Science Citation Index Expanded (SCIE)**, SCOPUS, Publisher: Springer, ISSN: 1433-7479, **IF: 3.643**, 3rd January 2022.

Journal Publications:

(Citations: 322, H-index: 12, i10-index: 14)

2012

1. Anupama Kaushik, Ashish Chauhan, Deepak Mittal, Sachin Gupta, "**COCOMO Estimates using Neural Networks**", International Journal of Intelligent Systems and Applications(IJISA) Vol. 4, No. 9, pp. 22-28, August,2012, ISSN: 2074-9058, Indexed in SCOPUS(Elsevier), Google Scholar.

2. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni , " **A Comparative study on Fuzzy Approaches for COCOMO's Effort Estimation**", International Journal of Computer Theory and Engineering (IJCTE), Vol. 4, No. 6, pp. 990-993, December, 2012, ISSN 1793-8201.

2013

1. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni , "**A Type-2 Fuzzy Logic Based Framework for Function Points**", International Journal of Intelligent Systems and Applications(IJISA), Vol. 5, No. 3, pp. 74-82, February 2013,ISSN: 2074-9058, Indexed in SCOPUS(Elsevier), Google Scholar.

2. Ashita Malik, Varun Pandey, Anupama Kaushik, "**An Analysis of Fuzzy Approaches for COCOMO II**", International Journal of Intelligent Systems and Applications (IJISA) Vol. 5, No. 5, pp. 68-75, February 2013, ISSN: 2074-9058, Indexed in SCOPUS(Elsevier), Google Scholar.

3. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni, " **Radial Basis Function Network using Intutionistic Fuzzy C Means for Software Cost Estimation**",

International Journal of Computer Applications in Technology(IJCAT),Vol. 47, No. 1, pp. 86-95, 2013, ISSN: 0952-8091. Indexed in SCOPUS (Elsevier), ACM digital library, Scirus (Elsevier), DBLP, Ei COMPENDEX, INSPEC (IEE). SJR: 0.03 Publisher: INDERSCIENCE(UK).

4. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni , "**A Simple Neural Network Approach to Software Cost Estimation**", Global Journal of Computer Science and Technology Neural & Artificial Intelligence, pp. 23-30, Vol. 13 Issue 1, Version 1.0, April,2013, Online ISSN: 0975-4172 & Print ISSN: 0975-4350.

2014

1. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni, " **An Improved Functional Link Artificial Neural Networks with Intuitionistic Fuzzy Clustering for Software Cost Estimation**", International Journal of Systems Assurance Engineering and Management (IJSA), Vol. 7, Issue 1, pp. 50-61, Oct.2014, Indexed in SCOPUS(Elsevier), Google Scholar, DBLP, EI-Compendex, OCLC, SCImago, SJR 0.23, Publisher : Springer

2015

1. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni, "**A Hybrid Approach for Software Cost Estimation using Polynomial Neural Networks and Intuitionistic Fuzzy Sets**", International Journal of Computer Applications in Technology(IJCAT), Vol. 52, No. 4,pp. 292-304, Dec. 2015, ISSN: 0952-8091. Indexed in SCOPUS (Elsevier), ACM digital library, Scirus (Elsevier), DBLP, Ei COMPENDEX, INSPEC (IEE). SJR: 0.03 Publisher: INDERSCIENCE (UK).

2016

1. Anupama Kaushik, Devendra Kr. Tayal, Kalpana Yadav, Arvinder Kaur, "**Integrating Firefly Algorithm in Artificial Neural Network Models for Accurate Software Cost Predictions**", Vol. 28, Issue 8 pp. 665-688, Journal of Software: Evolution and Process, Indexed in , Science Citation Index Expanded (Thomson Reuters) , SCOPUS(Elsevier), Publisher: Wiley, ISSN: 2047-7481, IF:1.305, June 2016.

2. Anupama Kaushik, "A Literature Review on Agile Software Development", International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), Vol. 5, No. 9, September 2016, pp. 337-339, ISSN (Online) 2278-1021, Indexed in Google Scholar, DOI 10.17148

2017

1. Anupama Kaushik, Shivi Verma, Harsh Jot Singh, Gitika Chabbra, "**Software Cost Optimization Integrating Fuzzy System and COA-Cuckoo Optimization Algorithm**", International Journal of Systems Assurance Engineering and Management (IJSA), Vol. 8 pp. 1461-1471, Indexed in SCOPUS(Elsevier), Google Scholar, DBLP, EI-Compendex, OCLC, SCImago, SJR 0.23, Paper Online, ISSN: 0976-4348 Publisher : Springer, April 2017.

2019

1. Anupama Kaushik, Niyati Singal, "**A hybrid model of wavelet neural network and metaheuristic algorithm for software development effort estimation**", International Journal of Information Technology (IJIT) Indexed in Google Scholar, DBLP, ISSN: 2511-2112 Publisher: Springer, July, 2019.

2. Anupama Kaushik, Devendra Kr. Tayal, Kalpana Yadav, "**A Comparative Analysis on Effort Estimation for Agile and Non-Agile Software Projects Using DBN-ALO**", DOI 10.1007/s13369-019-04250-6, Arabian Journal for Science and Engineering (AJSE), Vol. 45, pp. 2605-2618, Indexed in Science Citation Index Expanded, Scopus, Publisher: Springer, ISSN: 2191-4281, IF:1.518, November 2019.

2020

1. Anupama Kaushik, Devendra Kr. Tayal, Kalpana Yadav, "**The Role of Neural Networks and Metaheuristics in Agile Software Development Effort Estimation**", International Journal of Information Technology Project Management (IJITPM), Vol. 11, Issue 2, pp. 50-71, Indexed in, Emerging Sources Citation Index (ESCI), SCOPUS, Publisher: IGI Global, ISSN: 1938-0232, April-June 2020.

2. Anupama Kaushik, Devendra Kr. Tayal, Kalpana Yadav, "**A Fuzzified Story Point Approach for Agile Projects**", Int. J. Agile Systems and Management, Vol. 13, No. 2, pp. 103-129, Indexed in, SCOPUS, Publisher: Inderscience, ISSN: 1741-9182, June 2020.

2022

1. Anupama Kaushik, Prabhjot Kaur, Nisha Choudhary, Priyanka, "**Stacking regularization in analogy-based software effort estimation**", Soft Computing .https://doi.org/10.1007/s00500-021-06564-w Indexed in, **Science Citation Index Expanded (SCIE)**, SCOPUS, Publisher: Springer, ISSN: 1433-7479, **IF: 3.643**, 3rd January 2022.

2.   Kaushik, A., Singal, N. & Prasad, M., "**Incorporating whale optimization algorithm with deep belief network for software development effort estimation",** Int J Syst Assur Eng Manag (2022). https://doi.org/10.1007/s13198-021-01519-8. Indexed in, ESCI, SCOPUS, Publisher: Springer, ISSN: 0976-4348, 4th January 2022.

3.   Anupama Kaushik, Vibhor Chatwani and Namrata Singh, "**Comparative Analysis of Random Forest and Regression Tree for Software Cost Estimation",** GIS Science Journal, ISSN NO : 1869-9391 Vo. 9 Issue 2, pp 2050-2065, Feb. 2022. DOI:20.18001.GSJ.2022.V9I2.22.38768

Papers presented in Conferences

1. Anupama Kaushik "**An Investigation On Risk Management Through Project Scheduling Techniques**", International Conference on Management of Technologies and Information Security, pp. 321-328, ICMIS 2010, 21-24 January 2010, Indian Institute of Information technology Allahabad, India.

2. Anupama Kaushik, Dr. A.K. Soni, Dr.Rachna Soni, "**A New Approach to F-COCOMO using PI Membership Function**", pp 215-220, ISBN 978-81-920575-8-3, 2nd International Conference on Computer Applications (ICCA2012), January 27-31, 2012 Pondicherry, India.

3. Anupama Kaushik, Digvijay Singh Lathwal, Himanshu Gupta, " **Impact of Feature Selection and Engineering in the Classification of Handwritten Text**", pp. 3808-3811, 3rd International   Conference on Computing for Sustainable Global Development held at Bharti Vidhyapeeth Institute of Computer Application and Management on 16-18, March, 2016.

4. Anupama Kaushik, Devendra Kr. Tayal Kalpana Yadav, "**A Review on Software Cost Estimation techniques in Agile Projects**" pp. 4372-4375, 4th International Conference on Computing for Sustainable Global Development held at Bharti Vidhyapeeth Institute of Computer Application and Management on 01-03, March, 2017.

5. Anupama Kaushik, Devendra Kr. Tayal Kalpana Yadav, "**A Fuzzy Approach for Cost and Time Optimization in Agile Software Development**" 3rd International Conference on Advanced Computing and Intelligent Engineering, 22-24 December, 2018 Bhubaneswar, India.

6. Sahil Chopra, Ankita Gupta, Anupama Kaushik, "**Knowledge Directed Multi-task**

Framework for Natural Language Inference in Clinical Domain" Proceedings of the BioNLP 2019 workshop, pages 488–492 Florence, Italy, August 1, 2019. Association for Computational Linguistics. ISBN 978-1-950737-28-4.

7. Anupama Kaushik, Nisha Choudhary, Priyanka, "**Software Cost Estimation Using LSTM – RNN**", Proceedings of International Conference on Artificial Intelligence and Applications (ICAIA) 2020, 6-7 Feb., 2020 Delhi, India.

8. Anupama Kaushik, "**Role of ANN in Functionality and Designing of Solar Photovoltaic Cell: A Review**", Recent Advances in Mechanical Engineering RAME2020, Lecture Notes in Mechanical Engineering, pp. 239-247, eBook ISBN 978-981-15-9678-0, https://doi.org/10.1007/978-981-15-9678-0_21, May 2021.

Awards and Recognitions

1. Received research excellence award on Annual Day 2020.
2. Received Best Branch Counselor Award on 4th July 2021.
3. Received premier research award presented for excellence in research at Indira Gandhi Delhi Technical University, Delhi on 24th December, 2021.
4. Received research excellence award on Annual Day held on 15th April 2023.
5. Received research excellence award for Indian Patent granted, on Annual Day held on 15th April 2023.

Patent/Copyright

1. **IoT BASED SMART COMPLAINT BOX** (Patent filed on 15/01/2021 & Published on 22/01/2021, Application No: **202111001925**, The Patent Office Journal No. 04/2021 dated 22/01/2021, Part 1 & Page No: 3103)
2. **IoT BASED SMART SHOES FOR CHILD HEALTH MONITORING** (Patent filed on 20/03/2021 & Published on 26/03/2021, Application No: **202111011966**, The Patent Office Journal No. 13/2021 dated 26/03/2021, Part 1 & Page No: 15291)
3. **METHOD AND ELECTRONIC DEVICE FOR MONITORING USER IN WORK SITE** (Patent filed on 20/03/2021 & Published on 26/03/2021, Application No: **202111011965**, The Patent Office Journal No. 13/2021 dated 26/03/2021, Part 1 & Page No: 15290)
4. **METHOD AND ELECTRONIC DEVICE FOR PERSONALIZING USER ACTIVITY IN VIRTUAL** (Patent filed on 20/03/2021 & Published on 26/03/2021, Application No: **202111011967**, The Patent Office Journal No. 13/2021 dated 26/03/2021, Part 1 & Page No: 15292)
5. **METHOD FOR TRANSLATING SIGN LANGUAGE USING CONVULUTIONAL NEURAL NETWORK** (Patent filed on 15/09/2021 & Published on 15/10/2021, Application No: 202111041578, The Patent Office Journal No. 42/2021 dated 15/10/2021).

Patent Granted

1. The invention entitled "**AN EDGE COMPUTING BASED AUTOMATION SYSTEM FOR DENTAL SERVICES**" has been granted on 2nd May, 2022 by Government of India to the patentee **Dr. Anupama Kaushik** and **Dr. Prabhjot Kaur Sidhu**, Department of IT, MSIT.

Book Chapter/Books published:

1. **Role of Neural Networks in Software Cost Estimation**. LAMBERT Academic Publishing; ISBN: 978-3-659-86215-1
2. **A Fuzzy Approach for Cost and Time Optimization in Agile Software Development**. Published as a book chapter in Advanced Computing and Intelligent Engineering. Advances in Intelligent Systems and Computing, vol 1082, pp. 629-639, Springer, Singapore. ISBN 978-981-15-1081-6
3. **Software Cost Estimation Using LSTM – RNN**. Published as a book chapter in Advances in Intelligent Systems and Computing, vol 1164, pp. 15-24, Springer, Singapore. ISBN 978-981-15-4992-2.

One Week FDP's ATTENDED:

2016:

1. FDP on MATLAB Programming, NITTTR Chandigarh from 1st Feb. to 5th Feb. 2016
2. FDP on "Emerging Trends in Information Technology" at MSIT from 29th Feb. 2016 to 4th March 2016
3. FDP on "Algorithms" Department of Computer Science, Delhi University in collaboration with ACM India Education and ACM Delhi NCR Chapter from 7th July 2016 to 13th July 2016.
4. FDP on "Research Methodology and Data Analysis", at Maharaja Surajmal Institute from 16th Dec., to 23rd Dec., 2016.

2017:

1. FDP on Wireless Networks, NITTTR Chandigarh from 22nd May to 26th May 2017.
2. International workshop on " Fuzzy Logic Research Applications (ITWFLRA 2017)" organized by Dept. of CSE, IGDTUW from 16th Sept., 2017 to 20th Sept. 2017.

2018:

1. FDP on "Modelling and Simulation using MATLAB through ICT", NITTTR Chandigarh from 21st May to 25th May 2018.
2. FDP on "Data Science using R through ICT", NITTTR Chandigarh from 26th November to 30th November 2018.
3. FDP on "Open Source Technologies through ICT", NITTTR Chandigarh from 3rd December to 7th December 2018.

2019:

1. FDP on "Contemporary Issues and Challenges in Management, Education and Information Technology" at Maharaja Surajmal Institute of Technology from 5th Feb., to 9th Feb., 2019.
2. FDP on "Planning and Management for Institutional Excellence through ICT", NITTTR Chandigarh from 18th November to 22nd November 2019.

2020:

1. FDP on "Machine Learning using Python" organized by Brain Mentors Pvt. Ltd. held at MSIT from 2nd March to 6th March 2020.
2. FDP on "Neural Network and CNN" at NITTTR Chandigarh from 9th April to 13th April 2020.
3. FDP on "Latest Wireless and Computing Technologies" at NITTTR Chandigarh from 14th April to 18th April 2020.
4. FDP on "Life Skills Development" at NITTTR Chandigarh from 18th May to 22nd May 2020.
5. ATAL Academy Online FDP on "Artificial Intelligence" at FEDERATION OF INDIAN CHAMBERS OF COMMERCE AND INDUSTRY (FICCI) from 15th June to 19th June 2020.
6. Online FDP on "Data Analysis using Python" conducted in collaboration with 4Achievers Pvt. Ltd. from 28th December to 1st January 2021.

2021:

1. AICTE-ISTE approved Refresher Programme on "Use of ICT in Engineering Education" from 24th February 2021 to 2nd March 2021organized by MSIT.
2. FDP on "Recent Advancements and Challenges in IT", from 8th March to 12th March, 2021 at MSIT in online mode.
3. FDP on "Online Orientation Training Program for Mentors", from 21-25 June, 2021under NITTTR.
4. ATAL FDP on "Nature Inspired Optimization Techniques", from 19th July-23rd July 2021.
5. Online industrial training on "Data Science" conducted by Brain Mentors Pvt. Ltd. In association with department of CSE, MSIT from 15th November to 26th November 2021.
6. ATAL FDP on "Internet of Things: A Practical Approach", from 06-10 December, 2021 at MSIT Delhi.

2022:

1. AICTE MOE's IIC sponsored FDP on "Entrepreneurship, Innovations & Digital

Skills in New Era of AI", from 26th July- 29th July 2022 organized by MIT Moradabad.

2. Two weeks FDP on "Deep Learning" , from 21st November-3rd December,2022 organized by Industry Institute Interaction Cell and Dept. of CSE in association with Brain Mentors Pvt. Ltd. At MSIT.

2023:

1. Attended one week faculty development programme on "**Recent Advancement in Machine Learning and Artificial Intelligence**" organized by Department of IT, Maharaja Surajmal Institute of Technology from 6-10 February, 2023.
2. Attended one week faculty development programme on "**Re-Inventing Education Paradigm in India**" organized by Maharaja Surajmal Institute from 20-24 February, 2023.

SWAYAM COURSES:

1. NPTEL online certification on "**Computer Networks and Internet Protocol"** of 12 weeks January-April 2022.
2. NPTEL online certification on "**Introduction to Internet of Things"** of 12 weeks July-October 2022.
3. NPTEL online certification on **"Accreditation of Undergraduate Engineering Programme"** of 8 weeks 29 July 2022 – 30 September 2022.

SEMINAR ATTENDED:

1. "Emerging Trends in Technical Education" on 8th May, 2010 at MSIT on the occasion of the Annual Faculty Convention of the Indian Society for Technical Education (Delhi Section).
2. National Seminar on "Advances in Speech Technology AWay Towards Intelligent Human Computer Interaction" sponsored by AICTE and conducted by Dept. of CSE, MSIT from 27th -28th Nov., 2017

WORKSHOP ATTENDED:

1. "Web Intelligence and Big Data in Hadoop Ecosystem", on 18th February, 2014 at Bharati Vidyapeeth College of Engineering, New Delhi.
2. "Toward Transformational Leadership in Institutes of Higher Learning", 18-20 September, 2019 at AICTE Headquarters.

Memberships of Professional bodies

2. ISTE Life Membership No. LM89178
3. IEEE Membership No. 92168979

Major Responsibilities Held at College

1. HOD, IT Department (August 2020 – July 2022)
2. IEEE MSIT Branch Counselor (September 2019-till date)
3. Research Committee member (September 2021 onwards)
4. Conducted One week FDP sponsored by NITTTR on Wireless Networks (22ndMay to 26th May 2017)
5. Convener ISO (September 2016-August 2019)
6. Editor-in-chief Satyam, MSIT Journal of Research, Volume 4 (2015-2016)
7. Committee Member Annual Magazine Vision (2019-2020)
8. Software Incharge
9. Departmental Project Incharge

B.Tech Courses Taught

1. Data Communication Networks
2. Advance Computer Networks
3. E-Commerce and ERP
4. Introduction to Programming
5. Fundamentals of Computer
6. Industrial Management
7. Software engineering
8. Cloud Computing

Dr. Anupama Kaushik