

## Profile Page



Name : Dr Geeta Sikka  
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Department : Computer Science & Engg.  
Qualification : Ph D Analysis & Design of Analogy based Software Effort Estimation Approaches (National Institute of Technology, Jalandhar)  
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### Research Interests :

Data Mining, Software Engineering, Security, Big data, Cloud computing, Data Analytics

### Journal Publications :

Year	Journal	Publication
2020	Transactions on Emerging Telecommunications Technologies, WILEY (SCI IF-1.258)	Manoj Kumar, Harsh Kumar Verma, and Geeta Sikka, "A Secure Data Transmission Protocol for Cloud-assisted Edge-IoT Environment" (Accepted)
2020	Multimedia Tools and Applications (SCI IF 2.1)	Aruna Malik, Geeta Sikka, and Harsh K Verma, "A Reversible Data Hiding Scheme for Interpolated Images based on Pixel Intensity Range" Technique"
2019	International Journal of Computational Systems Engineering, Inderscience	Aarti, Geeta Sikka, Renu Dhir, "Empirical Validation of Object-Oriented Metrics on Cross-Projects with Different Severity Levels" (Accepted)
2019	International Arab Journal of Information Technology, Volume 16, Issue 1, Pages 148-155 (SCI IF:0.724)	Aruna Malik, Geeta Sikka, and Harsh K Verma, "A High Capacity Data Hiding Scheme Using Modified AMBTC Compression Technique"
2019	Recent Advances in computer Science and communications, BENTHAM SCIENCE (SCOPUS)	Utsav Upadhyay, and Geeta Sikka, "An Efficient Speculative Task Detection Algorithm for MapReduce Schedulers" (Accepted on 02/09/2019)
2019	Transactions on Emerging Telecommunications Technologies WILEY SCI (IF:1.535)	Manoj Kumar, Harsh Kumar Verma, Geeta Sikka, "A Secure and Authentic Data Transmission Protocol for Cloud-Based Edge-IoT Environment" (Accepted) Impact Factor 1.5(SCI)
2019	International Journal of Intelligent Systems Design and Computing (Inderscience)	Aarti, Geeta Sikka, and Tenu Dhir, "Regression based Software Fault Prediction using Biogeography-based Optimization (R-BBO)" (Accepted)

2019	International Journal of Intelligent Engineering Informatics, Inderscience (ESCI)	Aarti, GeetaSikka, and Renu Dhir Threshold based Empirical Validation of Object-Oriented Metrics on Different Severity Levels Vol.7 No.2/3, pp.231 - 262
2019	The International Arab Journal of Information Technology, (SCI IF:0.724)	Aarti, GeetaSikka, and Renu Dhir Genetic Algorithm based Clustering with Neural Network Classification for Software Fault Prediction
2018	International Journal of Information and Computer Security Science Direct, Elsevier (SCI IF- 2.86)	Urvashi, Geeta Sikka and Lalit K Awasthi, "Empirical risk assessment of attack graphs using time to compromise framework" (Accepted)
2018	International Journal of Engineering and Technology	Utsav Upadhyay, Geeta Sikka, "Framework of resource scheduler for big data applications with deadlines and priorities" (Accepted)
2018	Intelligent Decision Technologies (SCOPUS)	Pushpendra Kumar Rajput, Geeta Sikka, "Exploration in Adaptivness to Achieve Automated Fault Recovery in Self-healing Software Systems:A Review" (Accepted)
2018	International Journal of Data Mining, Modelling and Management	Aarti, Geeta Sikka, Renu Dhir, "Grey Relational Classification Algorithm for Software Fault Proneness with SOM Clustering" (Accepted)
2018	Aruna Malik, Geeta Sikka, Harsh K. Multidimensional Systems and Signal Processing, Volume 29, Issue 4, pp 1801–1818, October 2018. (SCI IF=2.088))	Aruna Malik, Geeta Sikka, Harsh K. Verma, "An AMBTC compression based data hiding scheme using pixel value adjusting strategy,"
2018	Computers and Security, Volume 77, Pages 349-359 (SCOPUS)	Urvashi Garg, Geeta Sikka, Lalit kumar Awasthi, "Empirical Analysis of attack graphs for mitigating critical paths and Vulnerabilities"
2017	Journal of Information and Optimization Sciences (Taylor and Francis) (ESCI)	Aruna Malik, Geeta Sikka, and Harsh K Verma, "A High Capacity text steganography scheme based on huffman compression and color coding"
2017	Multidimensional Systems and Signal Processing <a href="https://doi.org/10.1007/s11045-017-0530-8">https://doi.org/10.1007/s11045-017-0530-8</a> (SCI IF 2.3)	Aruna Malik, Geeta Sikka and Harsh K Verma, "An AMBTC Compression based data hiding pixel value adjusting strategy"
2017	Transactions on Emerging Telecommunications Technologies, 2018;e3292. <a href="https://doi.org/10.1002/ett.3292">https://doi.org/10.1002/ett.3292</a> (SCI IF 1.258)	Manoj Kumar, Harsh Kumar Verma, Geeta Sikka, "A secure lightweight signature based authentication for Cloud-IoT crowdsensing environments"
2017	Multimedia tools and applications, Volume 76, Issue 12, Pages 14151-14167 (SCI IF 2.1)	Aruna Malik, Geeta Sikka, and Harsh K Verma, "A high payload data hiding scheme based on modified AMBTC technique"
2017	Multimedia tools and applications, Volume 76, Issue 11, Pages 13025-13046 (SCI IF 2.1)	Aruna Malik, Geeta Sikka, and Harsh K Verma, An image interpolation based reversible data hiding scheme using pixel value adjusting feature
2017	Engineering science and technology, Volume 20, Issue 1, Pages 72-79 (SCI)	Aruna Malik, Geeta Sikka, and Harsh K Verma, A high capacity text steganography scheme based on LZW compression and color coding
2016	International Journal of System Assurance Engineering and Management Volume 7, Issue 1, Pages 1-26	Aarti, GeetaSikka, and Renu Dhir, An investigation on the effect of cross project data for prediction accuracy
2016	Multimedia tools and applications, Pages 1-17 (SCI IF 2.1)	Aruna Malik, Geeta Sikka, and Harsh K Verma, Image interpolation based high capacity reversible data hiding scheme

2016	International Journal of Education and Management Engineering (IJEME), Volume 1, Issue 1, Pages 1-8	Aarti, Geeta Sikka, and Renu Dhir, An investigation on the metric threshold for faultproneness
2015	Journal of Information Processing Systems Vol.11, No.2, pp.239-247, June 2015	Nandini Malhotra, Geeta Nagpal, "Genetic Symmetric Key Generation for IDEA"
2015	International Journal of Image, Graphics and Signal Processing Volume 7, Issue 4, Pages 68-74	Aruna Malik, GeetaSikka, and Harsh K Verma, A Modified Pixel-Value Differencing Image Steganographic Scheme with Least Significant Bit Substitution Method
2014	International Journal of Computational Intelligence Studies, Volume 3, Issue 1, Pages 40-73	Geeta Nagpal, Moin Uddin, Arvinder Kaur; Grey relational effort analysis technique using robust regression methods for individual projects
2014	International Journal of Computational Intelligence Studies, Volume 3, Issue 1, Pages 74 - 93	Pushpendra Rajput, Geeta Nagpal, Aarti; Feature weighted unsupervised classification algorithm and adaptation for software cost estimation
2014	The International Arab Journal of Information Technology, Volume 11, Issue 5, Pages 437-446 (SCI)	Geeta Nagpal, Moin Uddin, Arvinder Kaur; Grey Relational Effort Analysis Technique Using Regression Methods for Software Estimation
2014	ACM SIGBED, Volume 11, Issue 3, Pages 8-18	Surabhi Midha, Ajay K Sharma, Geeta Sikka; A survey on wireless sensor network clustering protocols optimized via game theory
2013	ACM SIGSOFT Software Engineering Notes Vol. 38, Issue 1, Pages 1-9	Geeta Nagpal, Moin Uddin, Arvinder Kaur; Analyzing software effort estimation using k means clustered regression approach
2012	International Journal of Soft Computing and Engineering (IJSCE) , Volume 1, Issue 6, Pages 20-27	Geeta Nagpal, Moin Uddin, Arvinder Kaur, A Hybrid Technique using Grey Relational Analysis and Regression for Software Effort Estimation using Feature Selection
2012	Journal of Information Processing Systems Volume 8, Issue 4, Pages 621-652	Geeta Nagpal, Moin Uddin, Arvinder Kaur; A Comparative Study of Estimation by Analogy using Data Mining Techniques
2012	International Journal of Computer Applications Volume 48, Issue 12, Pages 7399-0210	Saurabh Sarkar, Geeta Sikka, Ashish Kumar; Evolution and Optimization of Active Queue Management Algorithms over High Bandwidth Aggregates
2012	International Journal of Computer Applications Volume 52, Issue 15, Pages 8282-1278	Sangeeta Rani, Geeta Sikka; Recent techniques of clustering of time series data: A Survey
2011	ACM SIGSOFT Software Engineering Notes Volume 36, Issue 4, Pages: 1-5	Syona Gupta, Geeta Sikka, Harsh Verma; Recent methods for software effort estimation by analogy
	Big Data (Mary Ann Liebert Inc) (SCI IF 2.1)	Utsav Upadhyay, and Geeta Sikka, "STDADS:An Efficient Slow Task Detection Algorithm for Deadline Schedulers" (Accepted on 02/01/2020)

### Conference Publications :

Year	Conference	Publication
2019	International Conference on Futuristic Trends in Networks and Computing Technologies (FTNCT-2019) Springer	Raj Mohan Singh, Lalit Kumar Awasthi, and Geeta Sikka, "Techniques for Task Scheduling in Cloud and Fog Environment: A Survey" (Accepted)

2018	International Conference on Secure Cyber Computing and Communications	Sourabh Sarkar and Geeta Sikka, "A Comparative Study of Classifiers Used in Facial Embedding Classification" (Accepted)
2018	International Conference on Secure Cyber Computing and Communications	Sumandeep Kaur and Geeta Sikka, "Sentiment Analysis Approach Based on N-gram and KNN Classifier" (Accepted)
2016	MECIT	Aarti, G. Sikka, Renu Dhir, "Identification of error prone classes and quality estimation using semi supervised learning mechanism with limited fault data"
2016	Proceedings of the World Congress on Engineering and Computer Science, WCECS 2016	Chandanmeet Narula, Geeta Sikka; "Comparison of Apriori and Parallel FP Growth over Single-node and Multi-node Hadoop Cluster"
2016	Symposium on Colossal Data Analysis and Networking (CDAN) 18-19 March 2016 doi 10.1109/CDAN.2016.757 0965 Publisher: IEEE Explore	Vivek Sharma, Apoorv Agarwal, Renu Dhir, Geeta Sikka, "Sentiments mining and classification of music lyrics using SentiWordNet"
2016	Symposium on Colossal Data Analysis and Networking (CDAN) 18-19 March 2016 DOI: 10.1109/CDAN.2016.757 0949 Publisher: IEEE Explore	Apoorv Agarwal ,Vivek Sharma, Geeta Sikka and Renu Dhir, "Opinion Mining of News Headlines using SentiWordNet"
2015	Asia-Pacific Software Engineering Conference (APSEC), Pages 127-34	Shallu Sarvari, Paramvir Singh and Geeta Sikka, "Efficient and Scalable Collection of Dynamic Metrics using MapReduce"
2014	ICT and Critical Infrastructure: Proceedings of the 48th Annual Convention of Computer Society of India, Pages 695-702	Rakshit Arya and Geeta Sikka, "An Optimized Approach for Density Based Spatial Clustering Application with Noise"
2014	ICT and Critical Infrastructure: Proceedings of the 48th Annual Convention of Computer Society of India, Pages 723-728	Davendar Kumar Ojha, Geeta Sikka, "A Study on Vectorization Methods for Multicore SIMD Architecture Provided by Compilers"
2014	International Conference on Advances in Engineering and Technology(ICAET2014) March 29-30, 2014, Singapore	Pushpendra K Rajput, Geeta Sikka, "CGANN-Clustered genetic Algorithm with Neural Network for Software Cost Estimation"
2013	Proceedings of the World Congress on Engineering and Computer Science, Volume 2, Page 1-6	Mohit K. Gupta and Geeta Sikka, "Association Rules Extraction using Multi-Objective Feature of Genetic Algorithm"
2013	Geeta Nagpal, Moin Uddin and Arvinder Kaur, "Estimating Project Development Effort using Clustered Regression Approach"	Third International Conference on Computer Science and Information Technology(CCSIT 2013) Banglore,India
2011	International Conference on Databases and Data Mining (ICDDM 2011)	Munish Saini and Geeta Sikka, "Algorithm for Improvement of the Performance of Apriori Algorithm"
2010	ICCESSE 2010-International Conference on Computer,Electrical, and System Science, and Engineering at Penang February 2010	Geeta Sikka, Moin uddin, Arvinder Kaur, "Comparison of Imputation Techniques for efficient Prediction of Software Fault Proneness in Classes"
2010	The 2nd International Conference on Education Technology and Computer (ICETC 2010) Shanghai China during Jun 22-24, 2010,	Ms. Geeta Sikka, Dr. Ms. Arvinder Kaur, Dr. Moin Uddin, "Estimating Function points : Using Machine Learning and Regression Models"

### Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
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Book Chapter	“A Systematic review of attack graph generation and analysis techniques”, Book on Computer and Cyber Security: Principles, Algorithm, Applications and Perspectives	(Taylor & Francis) (In press)	Urvashi Garg, Geeta Sikka, Lalit Awasthi		2018
Book Chapter	Reducing Stage Weight Estimation Error of Slow Task Detection in MapReduce Scheduling	Advances in Intelligent Systems and Computing Book Series (AISC) Springer	Utsav Upadhyay, Geeta Sikka	2194-5357	2017
Book Chapter	An Optimized Approach for Density Based Spatial Clustering Application with Noise Advances in Intelligent Systems and Computing	Advances in Intelligent Systems and Computing, vol 248. Springer, Cham. DOI: <a href="https://doi.org/10.1007/978-3-319-03107-1_76">https://doi.org/10.1007/978-3-319-03107-1_76</a>	Rakshit Arya and Geeta Sikka		2014
Book Chapter	A Study on Vectorization Methods for Multicore SIMD Architecture Provided by Compilers	Advances in Intelligent Systems and Computing 248, DOI: 10.1007/978-3-319-03107-1_79, © Springer International Publishing Switzerland 2014	Davendar Kumar Ojha and Geeta Sikka		2014

### Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
PI	MODROBS	Modernization of Microprocessor Laboratory	MHRD	1998	2001	10 Lacs	Completed	
PI	Research	Learn able Indoor Transportation Robot(LITR)	TEQIP II	2015	2016	45000	Completed	
PI	Research	Analysis and Optimization of Attack Graphs	CSIR			24,98,000	Submitted	Mrs. Urvashi

Co PI	Research Project	Utilizing the power of Real Time Data Analytics and IoT to Improve Traffic & E Governance for Smart Cities Collaborative Research Scheme , AICTE	AICTE	June 2019	June 2010	1161000	Started	
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### Events Organized :

Category	Type	Title	Venue	From	To	Designation
Seminar	Natonal	Seminar on Information security	NIT Jalandhar	28-03-06	29-03-06	
STC	Natonal	Emerging Trends in Physics and Information Technology	NIT Jalandhar	10-06-13	14-06-13	Coordinator
STC	Natonal	Advances in Software Engineering & Knowledge Based Systems	NIT Jalandhar	16-12-13	20-12-13	Coordinator
STC	Natonal	Recent Trends in Software Engineering and Knowledge Mining	NIT Jalandhar	01-06-15	05-06-15	Coordinator
STC	Natonal	RAINLP	NIT Jalandhar	30-05-16	03-06-16	Coordinator
STC	Natonal	ACSITT	NIT Jalandhar	02-01-17	06-01-17	Coordinator
Coding event under CSI	Natonal	Technocracker Let's Codify	NIT Jalandhar with CSI	13-05-17	13-05-17	Coordinator
STC	Natonal	Recent advances in computer networks and information security	NIT Jalandhar	08-07-13	12-07-13	Coordinator
STC	Natonal	Data analysis and soft computing	NIT Jalandhar	13-06-2014	17-06-2014	Coordinator
STC	Natonal	Cloud computing and big data analytics	NIT Jalandhar	19-05-15	19-05-15	Coordinator
Workshop	Natonal	Software Engineering for IoT by Pankesh Patel	NIT Jalandhar	12-04-17	12-04-17	Coordinator
Expert Talk	Natonal	Expert talk delivered by Dr M M Sharma, Director, NIELIT, Chandigarh	NIT Jalandhar	12-09-17	12-09-17	Organizer
STC	Natonal	Cloud Computing and Internet of Things	NIT Jalandhar	18-12-2017	22-12-2017	Coordinator

Conference	International	International Conference on Secure Cyber Computing and Communications (ICSCCC 2018)	Department of Computer Science and Engineering, Dr B R Ambedkar NIT Jalandhar	15-12-2018	17-12-2018	Convener
Curtain Raiser, Tech NITi'19	Natonal	Curtain Raiser of Annual Technical Festival as Coordinator TechNiti, 2019	Video Conferencing hall, IT Building, NIT Jalandhar	03-05-2019	03-05-2019	Coordinator
Workshop	International	Two day Workshop on Data Science as Coordinator Sponsored by TEQIP III 27-28 May,2019	Video Conferencing hall, IT Building, NIT Jalandhar	27-05-19	28-05-19	Coordinator
Technical Fest	Natonal	techNITi19	NIT Jalandhar	08-11-19	10-11-19	Coordinator
STC	Natonal	Machine and Deep Learning in Computer Vision	NKN Hall, Department of CSE, NIT Jalandhar	09-08-19	13-08-19	Coordinator
Workshop	Natonal	Emerging Trends in Cyber Security	Video Conferencing Hall, Department of CSE, NIT Jalandhar	10-09-19	10-09-19	Coordinator
Technical	Natonal	HACK@NITJ	Video Conferencing Hall, NIT Jalandhar	21-09-19	22-09-19	Coordinator
Technical	Natonal	Hackathon	Video Conferencing hall, IT Building, NIT Jalandhar	19-01-2020	19-01-2020	Coordinator

### Professional Affiliations :

Designation	Organization
Member 94167781	IEEE
Member F-80002053	CSI
Fellow F-123338-2	Institute of Engineers

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Urvashi	Analysis And Design Of A Hybrid Model To Optimize And Prioritize Attack Graphs For Cyber Warfare	Completed	2019	Prof. Lalit Kumar Awasthi
Aarti	Fault prediction using machine learning techniques	Completed	2019	Renu Dhir
Neha Agarwal	Web Services	Ongoing	2018	Prof. Lalit Kumar Awasthi
Priyavrat	Sentiment Analysis	Ongoing	2018	Dr Geeta Sikka
Aruna Malik	Design and Analysis of Text and Image based Steganography Technique	Completed	2017	Dr. Harsh Verma
Dalpat Songara	Digital Image Processing	Ongoing	2017	Dr Rajneesh Rani
Raj Mohan Singh	Computer Networks	Ongoing	2017	Dr Geeta Sikka
Utsav Upadhyay	Design of efficient job scheduler for map reduce in heterogeneous environments	Ongoing	2014	

Saurabh Namdev	Performance Analysis of a new protocol for secure communication in GSM based Networks	Ongoing	2013	Dr. Harsh Verma
Pushpendra Rajput	Design and Analysis of an efficient Self healing Approach for Software Systems using MultiAgent Architecture	Ongoing	2013	
Manoj	Set of cryptographic solutions for secure cloud data storage	Ongoing	2013	Dr. Harsh Verma

### Patents :

Name	Reg./Ref. No.	Date of Award/Filing	Organization	Status
Copyright - Computer Software Work "Program for Attack Graph Generation, Optimization and Prioritization"	SW-9615/2017	08-11-2017	Copyright Office India	Registered

### Admin. Responsibilities :

Position Held	Organization	From	To
Head, Department of Computer Science and Information Technology Departments	NIT Jalandhar	Feb. 2016	Feb. 2018
Faculty Incharge	Women Cell, NIT Jalandhar	2006	2013
Assistant Proctor in Proctorial Cell	NIT Jalandhar	2011	2014
Faculty Advisor Fine Arts	NIT Jalandhar		
Deputy Nodal Officer, TEQIP II	NIT Jalandhar	May 2013	2014
Head Computer Centre	NIT Jalandhar	Feb. 2018	till date
Coordinator Social Media Cell	NIT Jalandhar	Feb 2018 onwards	
Professor -in-charge Telecommunication	NIT Jalandhar	Jan 2018 onwards	
Coordinator -Annual Report, Achievement and Faculty profile	CSE Department, NIT Jalandhar	Feb 2016	Feb 2018
Coordinator RDBMS Laboratory	CSE Department NIT Jalandhar		Till Date
Coordinator- Industry sponsored lectures, courses through video conferencing	CSE Department NIT Jalandhar	Feb 2016	Feb 2018
Coordinator-Handling Interaction with employers satisfaction through T&P cell	CSE Department, NIT Jalandhar	Feb 2016	Feb 2018
Coordinator-Memberships CSI, News and Media	CSE Department, NIT Jalandhar	Feb 2018	Till Date
Nodal Officer for Development of NIT Council Portal of NIT Jalandhar	NIT Jalandhar		
Coordinator- Departmental Library and Website Redesign	CSE Department, NIT Jalandhar		Till Date
Coordinator PhD/M.Tech	NIT Jalandhar		
Coordinator Hackathon	NIT Jalandhar	2017	Till Date
Member of the Finance Committee at NIT Jalandhar	NIT Jalandhar	April 2019 onwards	till date



Nominee of the Institute Senate, Board of Governors at NIT Jalandhar	NIT Jalandhar	Nov 2017 onwards	till date
Coordinator, TechNiti, 2019	Dr B R Ambedkar national Institute of Technology, Jalandhar	April 2019	till date

### Award and Honours :

<b>Title</b>	<b>Activity</b>	<b>Given by</b>	<b>Year</b>
Expert , Board of Studies, PTU	Expert , Board of Studies (Affiliated Colleges) for the period of 2019-2021	PTU	2019-2021
Session Chair on 9 February 2019	22nd Punjab Science Congress	DAVIET	2019
Session Chair on 8 February 2019	22nd Punjab Science Congress	DAVIET	2019
Nomination as Subject Expert (Computer Science and Engg.) on 07/02/2019	Interview of Candidates	IKGPTU	2019
Best Teacher Award	14 Convocation Ceremony at NIT Jalandhar on 7 April 2019	NIT Jalandhar	2019
Best Paper Award	International Conference on Secure Cyber Computing and Communications ICSCCC 2018	NIT Jalandhar	2018
Nomination as Subject Expert (Computer Science and Engg.) on 05/08/2018	Interview of Candidates	IKGPTU	2018
Nomination as Subject Expert (Computer Science and Engg.) on 21/08/2018	Interview of Candidates	IKGPTU	2018
Nomination as Subject Expert (Computer Science and Engg.) on 19/12/2018	Interview of Candidates	IKGPTU	2018
Expert talk on "Statistical Methods for Research" on May 18, 2018	Expert talk	GWC Ajmer	2018
Expert Talk on "Cyber Crime against Women: threats and Challenges"	Guest Lecture	Khalsa College Ludhiana	2017
Session Chair on 3 June, 2016	International conference on Sciences, engineering and Technical Innovations, ICSETI, 2016	C T Group of Institutions	2016
Session Chair	International multitrack conference	CT Institute of Engineering, Management and Technology	2015
Exper Talk on "Why Mine Data"	Workshop on Recent Trends in computational techniques	DAV college Jalandhar	2015
Session Chair	International Conference on Advances in Engineering and Technology	IIE Singapore	2014
Session Chair	National Conference on Recent Trends in Information & Communication Technologies	CT Institute of Engineering, Management and Technology	2013
Session Chair	International Conference on Education, Technology and Computer	ICETC Shanghai China	2010