


 <p>SHYAM LAL COLLEGE UNIVERSITY OF DELHI Est.1964</p>	 <p><b>SLC</b> (University of Delhi) SHYAM LAL COLLEGE</p> <p><b>Faculty Profile</b></p>				
<b>Title: Dr.</b>	<b>First Name: Vinod</b>	<b>Last Name: Kumar</b>			
<b>Designation:</b>	Assistant Professor				
<b>Department:</b>	Mathematics				
<b>Address:</b>	11/334 Third Floor, DDA Flats, Four Story, Garhi, East of Kailash, New Delhi-110065				
<b>Email:</b>	<a href="mailto:vkmaths@shyamlal.du.ac.in">vkmaths@shyamlal.du.ac.in</a> & <a href="mailto:vinod.iitkgp13@gmail.com">vinod.iitkgp13@gmail.com</a>				
<b>Web-Page:</b>	<a href="https://scholar.google.com/citations?view_op=list_works&amp;hl=en&amp;user=Wxywh_4AAAAJ">https://scholar.google.com/citations?view_op=list_works&amp;hl=en&amp;user=Wxywh_4AAAAJ</a> <a href="https://sites.google.com/shyamlal.du.ac.in/dr-vkumar/home">https://sites.google.com/shyamlal.du.ac.in/dr-vkumar/home</a>				
<b>Educational Qualifications (from Bachelor's Degree):</b>					
Degree	Subject	University/ College/Institution	Year		
B.Sc.	Mathematics, Physics and Chemistry	C. C. S. University Meerut	2004		
M.Sc.	Mathematics	C. C. S. University Meerut	2006		
M.Phil.	Mathematics	C. C. S. University Meerut	2011		
CSIR-NET	Mathematical Sciences	CSIR	2011		
GATE	Mathematics	MHRD	2011		
M.Tech	Computer Science & Data Processing	Indian Institute of Technology Kharagpur, Kharagpur, India	2013		
Ph.D.	Cryptography and Network Security	Jamia Millia Islamia, New Delhi	2020		
<b>Experience:</b>					
	Name of the University/College/Institute/Organization	Designation & Status (Permanent/Ad-hoc)	From	To	Effective Time Period
Teaching	Shyam Lal College, University of Delhi	Permanent	27-03-2023	Till date	
	PGDAV College, University of Delhi	Ad hoc	21-10-2016	28-02-2023	6 Years, 4 Months & 07 Days
	Deen Dayal Upadhyaya College, University of Delhi	Ad hoc	04-08-2016	19-10-2016	2 Months & 15 Days
	Deshbandhu College, University of Delhi	Ad hoc	16-08-2014	30-07-2016	1 Year, 11 Months & 15 days
	Aditi Mahavidyalaya, University of Delhi	Ad hoc	26-07-2013	22-05-2013	9 Months & 27 Days
Research/Corporate					
Consultancy					
<b>Teaching - Learning Process (During the Academic Year 2019-2020)</b>					
Are You using ICT (LMS, E-	If Yes, Please give the details below:				

Resources)?				
	Name	Total Numbers		
E- Resources				
Techniques and Platforms				
<b>Career Advancement and Contribution to College Corporate Life ( Last three years till June 2020):</b>				
	Name of the Committee/ Centre/ Society/ Cell	Designation	From	To
Convenor/Member Committees				
Any Other Administrative Responsibility (Bursar, Coordinator, Superintendent etc.)				
<b>Areas of Interest/Specialisation:</b>				
S.No.	Areas of Interest/ Specialization			
1	Cryptography and Network Security			
2	Number Theory			
3	Group and Ring Theory			
<b>Subjects Taught (During the Academic Year 2019-2020)</b>				
S.No.	Subject	S.No.	Subject	
1	Cryptography and Network security	2	Number Theory	
3	C++ Programming	4	Ring Theory and Linear Algebra-II	
5	Real and complex analysis	6	Linear Algebra and Linear Programming Problems	

<b>Publications: Citation Index in Scopus/Web of Science or Pub Med/ Indian Ciation Index</b>									
Title of Paper	Authors	Title of the Journal	Year of Publication	Citation Index	h-Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self citations	Impact factor, if any	
									Before June 2018
An Efficient Mutual Authentication Framework for Healthcare System in Cloud Computing	V. Kumar et al.	Journal of medical systems, Springer	2018	70	100			4.96	
A secure user authentication protocol using elliptic curve cryptography	V. Kumar et al.	Journal of Discrete Mathematical Sciences and Cryptography	2019	29	22				
A Secure Elliptic Curve Cryptography based Mutual Authentication Protocol for Cloud-	V. Kumar et al.	Telematics and Informatics	2019	63	93			9.14	

assisted TMIS									
An Elliptic Curve cryptography based Mutual Authentication Scheme for Smart Grid Communications using Biometric Approach	V. Kumar et al.	Journal of King Saud University-Computer and Information Sciences	2019	47	48			9.006	
SEBAP: A Secure and Efficient Biometric assisted Authentication Protocol using ECC for Vehicular Cloud Computing	V. Kumar et al.	International Journal of Communication Systems	2019	45	56			1.883	July 2019-June 2020
CSEF: cloud-based secure and efficient framework for smart medical system using ECC	V. Kumar et al.	IEEE ACCESS	2020	57	204			3.763	
ESEAP: ECC based secure and efficient mutual authentication protocol using smart card	V. Kumar et al.	Journal of Information Security and Applications	2020	53	54			4.92	
RSEAP: RFID based secure and efficient authentication protocol for vehicular cloud computing	V. Kumar et al.	Vehicular Communications	2020	70	48			8.373	
SFVCC: chaotic map-based security framework for vehicular cloud computing	V. Kumar et al.	IET Intelligent Transport Systems	2020	13	58			2.338	
PALK: Password-based anonymous lightweight key agreement framework for smart grid	V. Kumar et al.	International Journal of Electrical Power & Energy Systems	2020	47	155			5.659	
Integration of next generation IIoT with Blockchain for the development of smart industries	V. Kumar et al.	Emerging Science Journal	2020	25	22				
LAKAF: Lightweight authentication and key agreement framework for smart grid network	V. Kumar et al.	Journal of Systems Architecture	2021	44	59			5.836	
A secure and efficient key agreement framework for critical energy infrastructure using mobile device	V. Kumar et al.	Telecommunication Systems	2021	16	59			2.336	July 2021-June 2022

CKMIB: Construction of key agreement protocol for cloud medical infrastructure using blockchain	V. Kumar et al.	IEEE ACCESS	2022	7	204			3.763	
EAAF: ECC-based anonymous authentication framework for cloud-medical system	V. Kumar et al.	International Journal of Computers and Applications	2022	7	19				
RAFI: Robust authentication framework for IoT-based RFID infrastructure	V. Kumar et al.	Sensor, MDPI	2022	7	219			3.846	
RAVCC: Robust Authentication Protocol for RFID based Vehicular Cloud Computing	V. Kumar et al.	Journal of Network Intelligence	2022	11	9				July 2022 -
RAPCHI: Robust authentication protocol for IoMT-based cloud-healthcare infrastructure	V. Kumar et al.	The Journal of Supercomputing	2022	9	74			2.557	
A secure and energy efficient key agreement framework for vehicle-grid system	V. Kumar et al.	Journal of Information Security and Applications	2022	4	54			4.92	
PSEBVC: Provably Secure ECC and Biometric Based Authentication Framework Using Smartphone for Vehicular Cloud Environment	V. Kumar et al.	IEEE ACCESS	2022	1	204			3.763	
RKMIS: robust key management protocol for industrial sensor network system	V. Kumar et al.	The Journal of Supercomputing	2023	3	74			2.557	
RAKS: robust authentication and key agreement scheme for satellite infrastructure	V. Kumar et al.	Telecommunication Systems	2023		59			2.336	
Robust Biometric-Based Secure Framework for Vehicular Cloud Networking	V. Kumar et al.	IEEE Transactions on Intelligent Transportation Systems	2023	2	182			8.5	
ECLSS: Extended Chaotic Map-Based Certificateless Signature Scheme	V. Kumar et al.	Tuijin Jishu/Journal of Propulsion Technology	2023						
Robust Authentication Protocol for Autonomous Vehicle using Digital Twin Networks	V. Kumar et al.	Tuijin Jishu/Journal of Propulsion Technology	2024						

**Books and Chapters in edited Volumes/Books published, and paper in National /International conference**

Proceeding per teacher during the Year				
Title of Book/Paper/ Book Chapter	Publisher	National/International	Year	
A Pairing-Free Identity Based Authentication Framework for Cloud Computing	LNCS, Springer	International	2013	Before June 2021
Elementary Real Analysis	Golden Peacock Publications	National	2015	
The Cryptanalysis of a Secure Authentication Scheme Based on Elliptic Curve Cryptography for IOT and Cloud Servers	IEEE, ICACCCN	International	2018	
An Identity-Based Authentication Framework for Big Data Security	2nd International Conference on Communication, Computing and Networking in Lecture Notes in Networks and Systems,	International	2019	
Design Flaws and Cryptanalysis of a Standard Mutual Authentication Protocol for Cloud Computing-Based Healthcare System	Advances in Data Sciences, Security and Applications, Lecture Notes in Electrical Engineering	International	2019	
Design Flaws and Cryptanalysis of Elliptic Curve Cryptography- Based Lightweight Authentication Scheme for Smart Grid Communication	Advances in Data Sciences, Security and Applications, Lecture Notes in Electrical Engineering	International	2019	
An Efficient Identity-Based Mutual Authentication Protocol for Cloud Computing	Computational Science and its Applications, Chapman and Hall/CRC	International	2020	
Design flaws of efficient privacy-preserving data analysis scheme for smart grid network	Topics in Pure and Applied Mathematics	National	2020	

A Mutual Authentication and Key Agreement Protocol for Vehicle to Grid Technology	Innovations in Electrical and Electronic Engineering	International	2021	
Design Flaws and Suggested Improvement of Secure Medical Data Sharing Scheme Based on Blockchain	Springer Lecture Notes on Data Engineering and Communications Technologies	International	2021	
Design Flaws and Cryptanalysis of a Lightweight Mutual Authentication Protocol for V2V Communication in Internet of Vehicles.	International Conference on Machine Learning, Advances in Computing, Renewable Energy and Communication	International	2022	
Cryptanalysis and Suggested Improvement of "Lightweight Mutual Authentication Strategy for Internet of Electric Things"	International Conference on Innovation and Application in Science & Technology(ICIAST-2021)	International	2022	
A Cluster-based Data Aggregation Framework for WSN using Blockchain	Evolutionary Computing and Mobile Sustainable Networks. Lecture Notes on Data Engineering and Communications Technologies	International	2022	
Cryptanalysis of RFID Mutual Authentication Protocol for IoT	Smart Data Intelligence, 173-183, Algorithms for Intelligent Systems	International	2022	

Security and Privacy Preservation for Data Communication Network	4th International Conference on Innovative Data Communication Technology and Application, Procedia Computer Science	International	2022	
Cryptanalysis and design flaws of anonymous ECC based self-certified key distribution scheme for smart grid	International Conference on Innovation and Application in Science and Technology	International	2022	
Fuzzy Minimum Spanning Tree Calculation-Based Approach on Acceptability Index Method	Intelligent Data Analytics, IoT, and Blockchain	International	2023	July 2023- June 2024
Use of Cryptography in Networking to Preserve Secure Systems	Intelligent Data Analytics, IoT, and Blockchain	International	2023	

**Conference/ Seminar/ Symposium/ Workshop/ Presentation:**

Sr. No.	National/ International/state	Topic of the Conference/Seminar/Workshop	Paper Presentation/Attend/Resource Person	Date	Duration	
1	National	An Identity-Based Secure Authenticated Framework by Using Elliptic Curve Cryptography in Cloud Computing	Paper Presentation	2013	20 Minutes	Before June 2018
2	International	Identity-Based Authenticated protocol for Big Data services	Paper Presentation	2016	30 Minutes	
3	National	The Cryptanalysis of Identity-Based Authentication Scheme for the Internet of Things	Paper Presentation	2017	20 Minutes	
4	National	Cryptanalysis and Further Improvement of a Certificateless Aggregate Signature Scheme	Paper Presentation	2017	20 Minutes	
5	National	A Study on Identity Based Authentication Protocol for Cloud Computing	Paper Presentation	2017	20 Minutes	
6	International	The Cryptanalysis of provable Secure Authenticated Key Agreement Scheme for Distributed Mobile Cloud Computing Services	Paper Presentation	2017	20 Minutes	
7	International	Elliptic Curve Cryptography based Authentication Protocol for Cloud Computing	Paper Presentation	2018	25 Minutes	
8	International	Elliptic Curve Cryptography Based Mutual Authentication Scheme for communication system	Paper Presentation	2018	20 Minutes	
9	International	An Identity-Based Authentication Framework for Big Data Security	Paper Presentation	2018	25 Minutes	

1	International	Elliptic Curve Cryptography based Authentication Security Framework for Cloud-assisted TMIS	Paper Presentation	2019	20 minutes	July 2019 - June
2	National	An Authentication Protocol using ECC	Paper Presentation	2020	20 minutes	2020
3	National	ECC Based Authentication Protocol for Cloud-Medical System	Paper Presentation	2020	20 minutes	
1	National	A Secure and Efficient Authentication and Key Agreement Framework for Cloud-Medical System	Paper Presentation	2020	20 minutes	July 2020 - June 2021
2	National	ECC based Secure and Efficient Authentication Framework for Cloud-Healthcare Networking	Paper Presentation	2021	20 Minutes	
1	National	Construction of Authentication Framework for Cloud-TMIS using ECC	Paper Presentation	2021	20 Minutes	July 2021 - June 2022
2	International	Design Flaws and Suggested Improvement of Secure Medical Data Sharing Scheme Based on Blockchain	Paper Presentation	2021	25 Minutes	
3	International	A Cluster based Data Aggregation Framework for WSN using Blockchain	Paper Presentation	2021	25 Minutes	
4	International	Design Flaws and Cryptanalysis of a Lightweight Mutual Authentication Protocol for V2V Communication in Internet of Vehicles	Paper Presentation	2021	25 Minutes	
5	International	Cryptanalysis and Design Flaws of Anonymous ECC based Self-Certified Key Distribution Scheme for Smart Grid	Paper Presentation	2021	20 Minutes	
6	National	Blockchain, Security and Privacy	Resource Person	2021	50 Minutes	
7	International	Cryptanalysis of RFID Mutual Authentication Protocol for IoT	Paper Presentation	2022	20 Minutes	
1	National	Use of AI and Blockchain for Data Security and Privacy in Sustainable Development	Resource Person	2023	90 Minutes	July 2023 - June 2024

**Research Projects/ Innovation Projects (Major Grants/Research Collaboration):**

S.No.	Title of the Project	Funding Agency	Status/Output
<b>Research Guidance (Ph. D./ M. Phil.):</b>			
	No. of Ph.D. Students	No. of M.Phil. Students	
Awarded			

Submitted	Nil	9
Under Progress	3	1

**Fellowships/Awards /Distinctions/Recognitions:**

Year of Award	Name of the Fellowship/Award/ Distinction/ Recognition	Designation	Name of the Academic Bodies /Association	International /National/ State
1	Best paper award 2022 entitled "RSEAP: RFID based secure and efficient authentication protocol for vehicular cloud computing"		from USA based Q1 and SCIE journal "Vehicular Communications, Elsevier" Journal with IF:6.7	International

**Incentive to the teachers who receive recognition/awards**

State	National	International

**Association with the Professional Bodies:**

	Name of the Organization	Year
Membership	Operational Research Society of India (ORSI), India	2013
Any Other		

**Development of E-Learning Delivery Process/Material:**

S.No	Title of the Module	Recognized by/Submitted at/ Delivered at any government setup
1	A lifetime member of MathTech Thinking Foundation (MTTF), India	2022

**Refresher/ Orientation Programme/ FDP / Other Specialized Courses:**

S.No.	Topic	Name of the Organizer	Place	Duration and Year
1	"Faculty in Universities/Colleges/Institutes of Higher Education	Teaching Learning Centre Ramanujan College, University of Delhi	Online	23 April – 22 May, 2023
2	ADVANCED RESEARCH METHODOLOGY	Teaching Learning Centre Ramanujan College, University of Delhi	Online	22 May – 05 June, 2023

I do hereby solemnly declare that the information given and the statements made by me are correct and true to the best of my knowledge

**Signature with Full Name**  
**Dr. Vinod Kumar**