

Curriculum Vitae: Dr. Md Sadek Ferdous

CONTACT INFORMATION	ERCIM Alain Bensoussan Research Fellow Fraunhofer Institute for Applied Information Technology, Sankt Augustin, Germany ===== Associate Professor (On Research Leave) Department of Computer Science & Engineering BRAC University, Dhaka, Bangladesh	 	<i>Mobile:</i> +4915750989305 <i>E-mail:</i> ripul.bd@gmail.com <i>WWW:</i> https://msferdous.info
RESEARCH INTERESTS	Blockchain (Distributed ledger), Identity Management, Trust Management, Security, Privacy Enhancement Technologies & Security Usability		
EDUCATION	PhD in Computing Science School of Computing Science, University of Glasgow, UK <ul style="list-style-type: none">• Primary Supervisor: Dr. Ron Poet• Secondary Supervisor: Dr. Gethin Norman• Thesis: User-controlled Identity Management Systems using Mobile Devices.		2011 to 2015
	Master of Science in Security and Mobile Computing Norwegian University of Science and Technology (NTNU), Norway <ul style="list-style-type: none">• Supervisor: Professor Audun Jøsang, University of Oslo, Norway• Thesis: Identity Management with Petname Systems.		2007 to 2009
	Master of Science in Engineering (Computer Science) University of Tartu, Estonia <ul style="list-style-type: none">• Supervisor: Professor Audun Jøsang, University of Oslo, Norway• Thesis: Identity Management with Petname Systems.		2007 to 2009
	BSc. Engineering in Computer Science and Engineering Shahjalal University of Science and Technology, Bangladesh <ul style="list-style-type: none">• Final Year Project: SMS Gateway Server for Multi-cellular Operators.		1998 to 2004
EMPLOYMENT HISTORY	ERCIM Alain Bensoussan Research Fellow Fraunhofer Institute for Applied Information Technology (FIT), Sankt Augustin, Germany <ul style="list-style-type: none">• Researching on Self-sovereign Identity and blockchain and its application towards a more user-controlled identity system.		September 2021 to date
	Associate Professor (On Research Leave) Department of Computer Science & Engineering, BRAC University, Dhaka, Bangladesh <ul style="list-style-type: none">• Responsible for lecturing undergraduate and graduate level courses and assessing homework assignments and grades.• Responsible for conducting research on blockchain technology, security, privacy and identity management and supervising undergraduate and post-graduate students within the department.		May 2021 to date
	Assistant Professor Department of Computer Science & Engineering, Shahjalal University of Science & Technology, Sylhet, Bangladesh <ul style="list-style-type: none">• Responsible for lecturing undergraduate and graduate level courses on Computer Security, Cryptography, Programming Language in C, taking exams and assessing homework assignments and grades.• Responsible for conducting research on blockchain technology, security, privacy and identity management and supervising undergraduate and post-graduate students within the department.		March 2018 to April 2021
	Research Associate		July 2017 to date

Centre for Financial Technology, Imperial College Business School, Imperial College London, UK

- Responsible for conducting research to explore how the blockchain technology could be leveraged to tackle different security attacks, particularly business email compromise attacks, prevalent at financial institutions.

Technology Fellow July 2017 to January 2018

Cabinet Office, UK

- A joint project involving the Cabinet Office, UK, the Home Office, UK and the Ministry of Justice, UK for conducting research on how blockchain technology can be utilised for securing digital evidence.

Research Fellow September 2015 to June, 2016

Electronics and Computer Science, University of Southampton, UK

- Responsible for conducting research and developing systems to monitor and report security breaches in heterogeneous federated private clouds based on a novel security architecture.
- Part of the Horizon 2020 EU funded SUNFISH project consisting of 11 European partners.

Research Assistant July 2014 to August 2015

School of Computing Science, University of Glasgow, UK

- Responsible for conducting research and developing systems to collate a large collection of textual and multimedia data and to analyse them in a project called the Integrated Multimedia City Data (iMCD).
- Part of an ongoing ESRC funded Urban Big Data Centre, Glasgow.

Postgraduate Tutor March 2011 to June 2014

School of Computing Science, University of Glasgow, UK

- Responsible for tutoring undergraduate and MSc. Students in several courses such as Java Programming, Object-oriented Software Engineering, Algorithm & Data Structure and Information Management.

Research Assistant April 2010 to February 2011

School of Computing, University of Kent, UK

- Responsible for conducting research and developing systems in a JISC Funded project called Logins for Life.

Assistant Professor October 2009 to March 2010

Dept. of ICT, Metropolitan University, Bangladesh

- Responsible for lecturing undergraduate level courses on Computer Networking, Discrete Mathematics, Algorithms and Programming in C, taking exams and assessing homework assignments and grades.

Lecturer May 2006 to August 2007

Dept. of ICT, Metropolitan University, Bangladesh

- Responsible for lecturing undergraduate level courses on Computer Networking, Discrete Mathematics, Algorithms and Programming in C, taking exams and assessing homework assignments and grades.

Lecturer February 2005 to May 2006

Dept. of Information and Communication Engineering, Southeast University, Bangladesh

- Responsible for lecturing undergraduate level courses on Computer Networking, Assembly Language Programming and Data Structures, taking exams and assessing homework assignments and grades.

RESEARCH GROUP **Head, SUBSEL** September 2018 to April 2021

- SUBSEL (Shahjalal University Blockchain and SEcurity Laboratory), established in 2018, is the first blockchain focused security research group in Bangladesh.
- A number of undergraduate and graduate research students are pursuing cutting-edge exciting researches in the intersection of blockchain, security and privacy.

RESEARCH GRANT

- Innovation grant of 8 lakh (9400 USD) from the Information and Communication Technology Division, Government of Bangladesh to conduct research on the intersection of e-KYC and blockchain.
- AWS (Amazon Web Services) Cloud Credits for Research, a grant of 20,000 USD in order to deploy a private blockchain evaluation framework within Amazon Clouds.
- Shahjalal University grant of 4.5 lakh BDT (5300 USD) to develop an identity federation within Shahjalal University.

TRAINING

Independent Trainer

January 2019

EXPERIENCE

- Conducted the first-ever professional blockchain training in Bangladesh at Dot Com Systems, Bangladesh

NATIONAL STRATEGY

Principal Author

December 2019

DOCUMENT

- Principal author of *National Blockchain Strategy of Bangladesh*, a policy document strategising pathways for a blockchain-enabled Bangladesh.

PUBLISHED JOURNAL PUBLICATIONS

- [1] Ferdous, M.S., Chowdhury, M. J. and Hoque, M. A. A Survey of Consensus Algorithms in Public Blockchain Systems for Crypto-currencies. *Journal of Network and Computer Applications*. 2021.
- [2] Chowdhury, M. J. M., Usman, M., Ferdous, M. S., Chowdhury, N., Harun, A. I., Jannat, U. S. and Biswas, K. A Cross-Layer Trust-based Consensus Protocol for Peer-to-Peer Energy Trading Using Fuzzy Logic. *IEEE Internet of Things Journal*, 2021.
- [3] Chowdhury, M. J. M., Ferdous, M. S., Biswas, K. and Chowdhury, N, and Muthukumarasamy, V. COVID-19 Contact Tracing: Challenges and Future Directions. *IEEE Access*. 2020.
- [4] Shammee, T. I., Akter, T., Mou, M., Chowdhury, F. and Ferdous, M. S. A Systematic Literature Review of Graphical Password Scheme. *Journal of Computing Science and Engineering*. 14(4): 163-185, 2021.
- [5] Chowdhury, M. J. M., Ferdous, M. S., Biswas, K. and Chowdhury, N. A Survey on Blockchain-based Platforms for IoT Use-cases. *Knowledge Engineering Review*, 35(3), 2020.
- [6] Ferdous, M.S., Chowdhury, F., Alassafi, M. O., Alshdadi, A. A. and Chang, V. Social Anchor: Privacy-friendly Attribute Aggregation from Social Networks. *IEEE Access*. 8, 61844 - 61871, 2020.
- [7] Ferdous, M. S., Chowdhury, M. J. M., Biswas, K., Chowdhury, N. and Muthukumarasamy, V. Immutable Autobiography of Smart Cars Leveraging Blockchain Technology. *Knowledge Engineering Review*, 35(3), 1-17, 2020.
- [8] Chowdhury, M. J. M., Ferdous, M. S., Biswas, K., Chowdhury, N., Kayes, A. S. M., Alazab, M., and Watters, P. A Comparative Analysis of Distributed Ledger Technology Platforms. *IEEE Access*, 7, 167930-167943, 2019.
- [9] Ferdous, M. S., Chowdhury, F., Alassafi, M. O. In Search of Self-Sovereign Identity Leveraging Blockchain Technology. *IEEE Access*, 7, 103059 - 103079, 2019.

- [10] Ferdous, M. S., Chowdhury, S., and Jose, J. M. Analysing privacy in visual lifelogging. *Pervasive and Mobile Computing* 40, 430-449. 2017.
- [11] Ferdous, M.S., Chowdhury, S. and Jose, J. Geo-Tagging News Stories using Contextual Modelling. *International Journal of Information Retrieval Research - IGI Global*. 2017.
- [12] Chowdhury, F., Ferdous, M. S. Modelling Cyber Attacks. *International Journal of Network Security & Its Applications*. 9 (4), 13-31. 2017.
- [13] Chowdhury, F., Ferdous, M. S. Performance Analysis of R/KADEMLIA, Pastry and Bamboo Using Recursive Routing in Mobile Networks. *International Journal of Computer Networks & Communications (IJCNC)*. 9 (5), 41-54. 2017.
- [14] Ferdous, M.S. and Poet, R. Managing Dynamic Identity Federations using Security Assertion Markup Language (SAML). *Journal of Theoretical and Applied Electronic Commerce Research (JTAER)*. 10(2):53-76. 2015.
- [15] Ferdous, M.S. and Poet, R. Analysing Power Consumption Of Different Browsers & Identity Management Systems In Mobile Phones. *Special Issue on Mobile Computing, International Journal of Distributed and Parallel Systems*. 3(2):21-41. 2012.
- SUBMITTED JOURNAL PUBLICATIONS [16] Saifuzzaman, M., Ananna, T. N., Md. Javed Morshed Chowdhury, M. J. M., Ferdous, M. S. and Chowdhury, F. A Systematic Literature Review on Wearable Health Data Publishing under Differential Privacy. *International Journal of Information Security*, 2021.
- PUBLISHED BOOK CHAPTERS [17] Ferdous, M. S., Biswas, K., Chowdhury, M. J. M., Chowdhury, N. and Muthukumarasamy, V. Integrated Platforms for Blockchain-Enablement. In: *Elsevier Advances in Computers (ADCOM): Role of Blockchain Technology in IoT Applications*, Volume 115, 41-72, 2019.
- [18] Ferdous, M. S., Chowdhury, F. and Poet, R. A Hybrid Model of Attribute Aggregation in Federated Identity Management. In: *Enterprise Security Springer Book (ESSB)*. 2017.
- [19] Ferdous, M. S., Hussein, R., Madini, A., Alharthi, A., Walters, R. J. and Poet, R. Threat Taxonomy for Cloud of Things. In *Internet of Things and Big Data Analysis: Recent Trends and Challenges*. Edition: 1, Chapter: 5, Publisher: United Scholars Publications, USA. November, 2016. ISBN13: 9780692809921
- [20] Ferdous, M. S. and Jøsang, A. Entity Authentication & Trust Validation in PKI using Petname Systems. In Atilla Elci et al. (editors), *Theory and Practice of Cryptography Solutions for Secure Information Systems (CRYPSIS)*. Published by IGI Global, May 2013. ISBN13: 9781466640306
- CONFERENCE, WORKSHOPS, SYMPOSIUM PUBLICATIONS [21] Alom, I., Eshita, R. M, Harun, A. I., Ferdous, M. S., Shuhan, M. K. B., Chowdhury, M. J. M. and Rahman, M. S. Dynamic Management of Identity Federations using Blockchain. In: the *3rd IEEE Communications Society (ComSoc) sponsored conference on Blockchain and Cryptocurrency (ICBC)*. 2021.
- [22] Bhuiyan, M. S. I., Razzak, A., Ferdous, M. S., Chowdhury, M. J. M. and Hoque, M. A., Tarkoma, S. BONIK: A Blockchain Empowered Chatbot for Financial Transactions. In: *19th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom)*. 2020.

- [23] Shahriar, M. A., Bappy, F. H., Hossain, A. K. M. F., Saikat, D. D., Chowdhury, M. J. M. and Ferdous, M. S. Modelling Attacks in Blockchain Systems using Petri Nets. In: *19th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom)*. 2020.
- [24] Chowdhury, A. A., Chowdhury, F., Ferdous, M. S. A Study of Password Security Factors among Bangladeshi Government Websites. In: *23rd IEEE International Conference on Information and Communication Technology (IEEE ICCIT)*. 2020.
- [25] Sarker, S., Saha, A. K., Ferdous, M. S. A Survey on Blockchain & Cloud Integration. In: *23rd IEEE International Conference on Information and Communication Technology (IEEE ICCIT)*. 2020.
- [26] Moniruzzaman, M., Chowdhury, F., and Ferdous, M. S. Examining Usability Issues in Blockchain-Based Cryptocurrency Wallets. In: *2nd International Conference on Cyber Security and Computer Science (ICONCS 2020)*, 2020.
- [27] Chowdhury, M. J. M., Ferdous, M. S., Biswas, K. and Chowdhury, N., Watters, P., Ng, A. Trust Modeling for Blockchain-based Wearable Data Market. In: *International Workshop on Resource brokering with blockchain (RBchain)*, 2019.
- [28] Jannat, U. S., Hasnayeem, S. M., Shuhan, M. K. B. and Ferdous, M. S. Analysis and Detection of Malware in Android Applications Using Machine Learning. In: *International Conference on Electrical, Computer and Communication Engineering (ECCE)*, 2019.
- [29] Moniruzzaman, M., Chowdhury, F. and Ferdous, M. S. Measuring Vulnerabilities of Bangladeshi Websites. In: *International Conference on Electrical, Computer and Communication Engineering (ECCE)*, 2019.
- [30] Ferdous, M. S., Chowdhury, M. J. M., Biswas, K. and Chowdhury, N. Immutable Autobiography of Smart Cars. In: *3rd Symposium on Distributed Ledger Technology (SDLT)*, 2018.
- [31] Chowdhury, M. J. M., Ferdous, M. S. and Biswas, K. Blockchain Platforms for IoT Use-cases. In: *2nd Symposium on Distributed Ledger Technology (SDLT)*, 2019.
- [32] Siddiki, M. R., Talha, M. A., Chowdhury, F., and Ferdous, M. S. CrowdsouRS: A crowdsourced reputation system for identifying deceptive online contents. In: *Proceedings of the 20th International Conference of Computer and Information Technology (ICCIT)*, 2017.
- [33] Margheri, A., Ferdous, M. S., Yang, M. and Sassone, V. A Distributed Infrastructure for Democratic Cloud Federations. In: *Proceedings of IEEE Cloud*. 2017.
- [34] Ferdous, M. S., Margheri, A., Yang, M. and Sassone, V. Decentralised Runtime Monitoring for Access Control Systems in Cloud Federations. In: *Proceedings of the 37th International Conference on Distributed Computing Systems (ICDCS)*. 2017
- [35] Chowdhury, S., Ferdous, M. S. and Jose, J. Understanding Lifelog Sharing Preferences of Lifeloggers. In: *Proceedings of the 28th Australian Conference on Human-Computer Interaction (OzHCI)*. 2016.
- [36] Ferdous, M. S. and Poet, R. Formalising Identity Management Protocols. In: *Proceedings of the 14th Annual Conference on Privacy, Security and Trust (PST-16)*. 2016.

- [37] Ferdous, M. S., Chowdhury, S. and Jose, J. Privacy Threat Model in Lifelogging. In: *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct*. 2016.
- [38] Chowdhury, S., Ferdous, M. S. and Jose, J. Exploring Lifelog Sharing and Privacy. In: *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct*. 2016.
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- [40] Chowdhury, S., Ferdous, M. S. and Jose, J. Bystander Privacy in Lifelogging. In: *Proceedings of the British HCI-16* . 2016.
- [41] Chowdhury, S., Ferdous, M. S. and Jose, J. A User-Study Examining Visualization of Lifelogs. In: *Proceedings of the 14th International Workshop on Content-based Multimedia Indexing (CBMI-16)*. 2016.
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- [45] Ferdous, M. S., Norman, G and Poet, R. Mathematical Modelling of Identity, Identity Management and Other Related Topics. In: *Proceedings of the 7th International Conference on Security of Information and Networks (SIN 2014)*. Glasgow, UK. September, 2014.
- [46] Ferdous, M. S. and Poet, R. Analysing Attribute Aggregation Models in Federated Identity Management. In: *Proceedings of the 6th International Conference on Security of Information and Networks (SIN-13)*. Aksaray, Turkey. November 2013.
- [47] Ferdous, M. S. and Poet, R. Portable Personal Identity Provider in Mobile Phones. In: *Proceedings of the 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-13)*. Melbourne, Australia. July 2013.
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- [49] Ferdous, M. S. and Poet, R. A comparative analysis of Identity Management Systems. In: *Proceedings of the International Conference on High Performance Computing and Simulation (HPCS), 2012*. Madrid, Spain. July 2012.
- [50] Ferdous, M. S., Chowdhury, M. J. M., Moniruzzaman, M. and Chowdhury, F. Identity Federations: A New Perspective for Bangladesh. In: *Proceedings of the International Conference on Informatics, Electronics & Vision (ICIEV)*. Dhaka, Bangladesh. May, 2012.

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- [52] Moniruzzaman, M., Ferdous, M. S. and Hossain, R. A study on privacy policy enforcement in access control models. In: *the proceedings of the 13 International Conference on Computer and Information Technology (ICCIT, 2010)*. Dhaka, Bangladesh. December, 2010.
- [53] Singh, K., Jøsang, A., Ferdous, M. S. and Borgaonkar, R. Spam filter optimality based on signal detection theory. In: *the Proceedings of the 2nd International Conference on Security of Information and Networks, SIN 2009*. Gazimagusa, North Cyprus. October, 2009.
- [54] Ferdous, M. S., Jøsang, A., Singh, K. and Borgaonkar, R. Security Usability of Petname Systems. In: *the Proceedings of the 14th Nordic Conference on Secure IT systems (NordSec 2009)*. Oslo, Norway. October, 2009.
- [55] Ferdous, M. S. and Chowdhury, F. Covert Channel Communication in RFID (Short Paper). In: *the proceedings of the First International Conference on Security of Information and Networks, (SIN 2007)*. Gazimagusa, North Cyprus. May, 2007.
- [56] Ferdous, M. S., Chowdhury, F. and Acharjee, J. C. An Extended Approach to Enhance the Performance of the Current NAPT. In: *the proceedings of the IEEE International Conference on Information & Communication Technology, (ICICT, 2007)*. Dhaka, Bangladesh. March, 2007.
- [57] Ferdous, M. S. and Chowdhury, F. Middleware Distributed Approach to Synchronous Detection of ARP Cache Poisoning. In: *the proceedings of the 1st Indian Conference on Computational Intelligence and Information Security, (ICCIIS, 07)*. Madurai, India. 2007.
- [58] Ferdous, M. S., Chowdhury, F. and Moniruzzaman, M. A Taxonomy of Attack Methods on Peer-to-Peer Network. In: *In the proceedings of the 1st Indian Conference on Computational Intelligence and Information Security, (ICCIIS, 07)*. Madurai, India. 2007.
- POSTERS
- [59] Ferdous, M. S. and Poet, R. CAFS: A Framework for Context-Aware Federated Services. In: *the fifth annual Scottish Informatics and Computer Science Alliance (SICSA) PhD Conference, 2013*.
- [60] Ferdous, M. S. and Poet, R. Portable Personal Identity Provider in Mobile Phones. In: *3rd Cyber Security Meetup, Glasgow, 2013*.
- [61] Ferdous, M. S. and Poet, R. Analysing Power Consumption of Identity Management Systems in Mobile Phones. In: *the fourth annual Scottish Informatics and Computer Science Alliance (SICSA) PhD Conference, 2012*.
- [62] Ferdous, M. S. and Poet, R. Identity Management using Mobile Devices. In: *the third annual Scottish Informatics and Computer Science Alliance (SICSA) PhD Conference, 2011*.
- [63] Ferdous, M. S. and Gaur, S. A text free mobile phone contact book with social touch. Award winning poster in *the 13th Nordic Conference on Secure IT-systems (NordSec, 2008)*, Copenhagen, Denmark, 2008.

Distinguished Juror & Mentor

- Bangladesh Blockchain Olympiad, 2020 & 2021.

Journal

- Reviewer of the *IEEE Systems Journal*.
- Reviewer of the *International Journal of Information Security*.
- Reviewer of the *Frontiers of Computer Science*.
- Reviewer of the *IEEE Transactions on Intelligent Transportation Systems*.
- Reviewer of the *IEEE Access*.
- Reviewer of the *Journal of Parallel and Distributed Computing*.
- Reviewer of the *Knowledge Engineering Review*.
- Reviewer of the *Theory and Practice of Cryptography Solutions for Secure Information Systems (CRYPSIS)*. Editors: Atilla Elci et al. Published by IGI Global, May 2013. ISBN13: 9781466640306
- Reviewer of the *International Journal of Network Security (IJNS)*.

Conference

- PC member, the 19th IEEE International Conference on Trust, Security and Privacy in Computing and Communications, TrustCom, 2020.
- Reviewer, Australasian Conference on Information System, ACIS, 2020.
- Track chair, the IEEE Region 10 Symposium (TENSYP), 2020.
- Joint Secretary, the 2nd International Conference on Bangla Speech and Language Processing (ICBSLP), 2019.
- Joint Secretary, the 1st International Conference on Bangla Speech and Language Processing (ICBSLP), 2018.
- PC Member, the 3rd Symposium on Distributed Ledger Technology (SDLT), 2018.
- Program Co-Chair, the 8th International Conference on Security of Information and Networks (SIN'15), 2015.
- Local Arrangements Co-Chair, the 7th International Conference on Security of Information and Networks (SIN'14), 2014.
- PC Member (Poster Chair), the 6th International Conference on Security of Information and Networks (SIN'13), 2013.
- Organiser of the 1st SICSA Cyber Security Conference, 2013.
- PC Member of the 17th Nordic Conference on Secure IT Systems (NordSec 2012).
- Organiser of the workshop titled "Large Scale Experiments & Modelling" at the SICSA PhD Conference 2012.

PROJECTS

BEC Attack Mitigation using Blockchain

In this project, I have been responsible for conducting research on how blockchain can be utilised for mitigating BEC (Business Email Compromise) attacks.

Securing Digital Evidence using Blockchain

This was a joint project involving the Cabinet Office, UK, the Home Office, UK and the Ministry of Justice, UK for conducting research on blockchain technology can be utilised for securing digital evidence. During this research I developed a proof of concept prototype which is now being investigated for wider deployment.

SecUre iNFormatiOn SHaring in federated heterogeneous private clouds (SUN-FISH)

This project focuses on how the secure federation of private clouds based on the Public Sector needs can be deployed to enable the responsible organisations within the public sectors to share data and services transparently with required security levels. This is a Horizon 2020 EU funded project consisting of 11 European partners.

Integrated Multimedia City Data (iMCD):

Part of an ongoing ESRC funded **Urban Big Data Centre**, Glasgow to conduct research and develop systems for collating a large collection of textual and multimedia data from online news sources, microblogs, social sharing sites such as YouTube & flickr and wearable sensors such as life-loggers and GPS devices and then to analyse this data using machine learning techniques.

Logins for Life:

This was a JISC Funded year-long project which investigated how different Authentication Systems can be integrated into the university system so that users can use their preferred authentication modes to manage the university account and access different restricted pages.

Identity Management with Petname Systems:

Master's thesis in which I investigated the possibility and usability of applying Petname Systems for better Identity Management.

SUPERVISION

Performance Analysis of Private Blockchain Systems, 2020

In this research an application-agnostic blockchain performance analyser was developed which could be utilised to measure the performance of different private blockchain systems for a range of applications.

Privacy-preserving e-Voting using Blockchain Technology, 2020

A research work which explored the idea idea of privacy-preserving e-Voting using Blockchain and Multi-party Computation.

Security Ceremonies using Alternate Realities, 2020

A research developed novel mechanisms which could used to improve the security of existing systems using VR (Virtual Reality) and AR (Augmented Reality).

Extending Web-of-Trust Model using Blockchain Technology, 2020

A research explored the avenue of extending the PGP Web-of-Trust Model using Blockchain Technology.

Quantum Resource Estimation for Breaking Cryptographic Protocols in Blockchain Systems, 2020

This research simulated and estimated the quantum resources would be required to break a cryptographic protocol used in many cryptocurrencies.

A Blockchain-based IoT Infrastructure, 2020

A research which developed an blockchain-based IoT infrastructure for different applications.

HealthLedger: A Blockchain and IPFS based System for Electronic Health Records, 2020

A research which developed a Blockchain and IPFS based System for the storage and dissemination of electronic health records gather from smart watches.

Decentralised Identity Federation using Blockchain Technology, 2019

A research which explored how a decentralised identity federation can be developed using a smart-contract supported blockchain technology.

AI-supported Decentralised Chatbot using Blockchain Technology, 2019

A research which developed an AI-powered decentralised chatbot using a smart-contract supported blockchain technology which can be utilised for financial transactions.

Security Usability of Cryptocurrencies, 2019

A research which explored the usability of different crypto currencies.

TECHNICAL SKILLS Programming Languages:

Java, C, C++, Go, Solidity, PHP, JSP, Shell.

Web Technologies:

HTML, XHTML, JavaScript, CSS, DOM, XML, SAML, XACML, XSLT, XUL, XPCOM, OpenID, OAuth, Blockchain.

Major Software:

Ethereum, Hyperledger Fabric, Node.js, AVISPA, Shibboleth, Apache, Apache-Tomcat, Jetty, Docker, SimpleSAMLphp, Network Simulator (NS), Protege, Net-SNMP, Subversion, GIT.

Databases:

MongoDB, MySQL.

Operating Systems:

Linux, Android, Windows.

- HONOURS & AWARDS**
- Recipient of the **Student Travel Grants** to present a paper at the **International Conference on High Performance Computing and Simulation (HPCS)**, 2012.
 - Recipient of the **Scottish Informatics and Computer Science Alliance (SICSA) PhD Studentship** for the doctoral study.
 - Joint-author of the **Award winning poster** “A text free mobile phone contact book with social touch” at the **13th Nordic Workshop on Secure IT-systems (NordSec, 2008)**, Copenhagen, Denmark.
 - Recipient of the prestigious European Union funded **Erasmus Mundus Scholarship** for studying the **Master’s in Security and Mobile Computing (NordSecMob)**.
 - Awarded as the **Best teacher** of the Department of Information and Communication Engineering in Southeast University in the Fall Semester, 2006.
 - **Stood 20th in the merit list among 250,000+** students in Secondary School Certificate examination and received **Prime Minister Award of Excellence** and **Govt. Scholarship**.

REFERENCES

Available upon request.