


Visiting Researcher

Department of Electrical Engineering and Computer Science

Khalifa University

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RESEARCH INTERESTS

- **Fog/Edge Computing:** Time-sensitive computation offloading, mobility-aware computation offloading, programming/re-configuring Fog/Edge devices, secure and verifiable computing.
- Worked on a variety of Internet of Things (IoT) challenges, including Internet of Drone architectures, low-latency WiFi networks, long-range and scalable IoT networks using WiFi HaLow.
- Experience with cloud computing environment such as Amazon AWS and developing fog/edge computing environments using iFogSim, CloudSim, WorkFlowSim etc.

EDUCATION

Degree	University	CPI/%	Year
Ph.D. (Thesis Submitted) in Computer Science & Engineering	Indian Institute of Information Technology Guwahati, Guwahati	–	2019-2023
Master of Technology in Information Technology	North-Eastern Hill University, Shillong	8.35/10	2016-2018
Bachelor of Technology in Information Technology	North-Eastern Hill University, Shillong	61%	2011-2015
Higher Secondary (10+2)	Ramanujan Junior College, Nagaon	66%	2011
High School (10)	Nilbahan Jatiya Vidhyalaya, Hojai	73%	...2009

RESEARCH EXPERIENCE

1. Position: Visiting Researcher (October 2023 - till date)
 Department: Electrical Engineering and Computer Science
 P.I.: Dr. Abdulhadi Shoufan
 Organization: Khalifa University, Abu Dhabi, UAE
2. Position: Junior Research Fellow (September 2019- October 2023)
 Project: Design Innovation Centre
 P.I.: Prof. Ferdous Ahmed Barbhuiya and Dr. Rakesh Matam
 Organization: Indian Institute of Information Technology, Guwahati

WORK EXPERIENCE

1. Position: Information Technology Faculty (February 2018- August-2019)
Organization: National Institute of Electronics & Information Technology (NIELIT), Shillong, India.

MAJOR PROJECTS UNDERTAKEN

- Ph.D. Work: “Design and development of efficient and reliable task offloading frameworks for Fog-Computing environment”
Supervisors: Dr. Rakesh Matam, IIIT Guwahati and Prof. Ferdous A. Barbhuiya (September 2019- October 2023)
 - Designing a framework for acquiring state information and predicting resource availability for task offloading in cooperative fog-networks.
 - Design and development SDN-based re-configurable edge network architecture for Industrial Internet of Things.
 - Designing of a non-interactive verifiable and secure system for Edge Computing
 - Designing of a task migration scheme to handle mobility and fog node failure in co-operative fog computing environment.
- M.Tech. Dissertation: “Design, analysis and implementation of ID-based short signature scheme”
Supervisors: Dr. Subhas C. Sahana, and Prof. Md. Iftikhar Hussain, North-Eastern Hill University, Shillong.
 - Designing a new identity-based short signature scheme
 - Analysis of a key-escrow free multi-signature scheme.
- B.Tech Dissertation: “Design, Analysis and Implementation of Pure Short Signature Schemes Using Bilinear Pairing”
Supervisor: Dr. Subhas C. Sahana, North-Eastern Hill University, Shillong.
 - Design, analysis and implementation of pure short signature schemes using bilinear pairing.

PUBLICATIONS

- Journals
 - J1. Mehbub Alam, Nurzaman Ahmed, Rakesh Matam, Mithun Mukherjee, and Ferdous Ahmed Barbhuiya, “SDN-based Re-configurable Edge Network Architecture for Industrial Internet of Things”, in *Internet of Things Journal, IEEE*, 2023, Pages 1-1, Impact Factor: 10.6 (Early access).
 - J2. Mehbub Alam, Nurzaman Ahmed, Rakesh Matam, and Ferdous A Barbhuiya, “IEEE 802.11 ah-Enabled Internet of Drone Architecture”, in *Internet of Things Magazine, IEEE*, Vol. 5, 2022, Pages 174-178, Impact Factor: NA.
 - J3. Mehbub Alam, Nurzaman Ahmed, Shyamal Ghosh, Rakesh Matam, and Ferdous Ahmed Barbhuiya, “*OptiFog: A Framework for Acquiring State Information and Predicting Resource Availability for Task Offloading in Cooperative Fog-Networks*”, in *Transactions on Services Computing, IEEE*, Vol. xx, 2023, Pages xx-xx, Impact Factor: NA (Communicated).
 - J4. Mehbub Alam, Nurzaman Ahmed, Rakesh Matam, and Ferdous Ahmed Barbhuiya, “Analysing the Suitability of IEEE 802.11ah for Next Generation Internet

of Things: A Comparative Study”, in *Ad Hoc Networks, Elsevier*, 2023, Pages xx-xx Impact Factor: NA (under revision).

- Conferences

- C1. Mehbub Alam, Nurzaman Ahmed, Rakesh Matam, and Ferdous Ahmed Barbhuiya, “ioFog: Prediction-based Fog Computing Architecture for Offline IoT”, in *International Wireless Communications and Mobile Computing (IWCMC-2021, IEEE)*, 2021, Pages 1387-1392.
- C2. Mehbub Alam, Nurzaman Ahmed, Rakesh Matam, and Ferdous Ahmed Barbhuiya, “L3Fog: Fog Node Selection and Task Offloading Framework for Mobile IoT”, in *IEEE INFOCOM, IEEE Conference on Computer Communications Workshops (INFOCOM WORKSHOPS-2022, IEEE)*, 2022, Pages 1-6.
- C3. Sangeeta Kakati, Mehbub Alam, Rakesh Matam, Ferdous Ahmed Barbhuiya, and Mithun Mukherjee, “Mobility-aware Task Offloading in Fog-Assisted Networks”, in *IEEE Global Communications Conference (GLOBECOM 2022, IEEE)*, 2022, Pages 2897-2902.
- C4. Mehbub Alam, Nurzaman Ahmed, Rakesh Matam, and Ferdous Ahmed Barbhuiya, “RedgeX: Meta-learning based Optimal Analytical Model for Programmable Edge Intelligence”, (communicated).
- C5. Mehbub Alam, Rakesh Matam, and Ferdous Ahmed Barbhuiya, “OptFog: Optimized Mobility-Aware Task Offloading and Migration Model for Fog Networks”, (communicated).

ACADEMIC ACHIEVEMENTS AND AWARDS

- Received SRF Fellowship from IIIT Guwahati.
- Received JRF Fellowship from Ministry of Education, Government of India.
- IEEE R10 Ethics Champion 2023
- Felicitated with “Anandaram Boruah Student Award”, 2009 for the performance of 10th standard board examination by State Government of Assam.

WORKSHOP PARTICIPATED

- Attended the pre-conference workshop “International Conference on Computing and Communication Systems (I3CS)” and conducted a hands-on on “Cloud computing with AWS” along with Prof. Ferdous Ahmed Barbhuiya, organized by the Department of Information Technology, North-eastern Hill University, Shillong, in association with IEEE Guwahati Subsection March-2023.
- Attended a workshop on “Brain Computer Interface” organized by the department of Computer Science and Engineering, IIIT Guwahati March-2023.
- Attended the workshop on “R-Programming” organized by CIPHER, North-Eastern Hill University, Shillong, August-September 2011.
- Attended the workshop “Internet of Things: It’s inside out” organized by the Department of Information Technology, North-Eastern Hill University, Shillong, March-2017.
- Attended one week Industrial In Plant Training on Television Broadcasting Systems (Studio & Transmitter) at Doordarshan Kendra, Guwahati, January-2014.

PROFESSIONAL & ADMINISTRATIVE ACTIVITIES

1. Journal Reviewer

- *Transactions on Services Computing*, IEEE.
- *Transactions on Mobile Computing*, IEEE.
- *Transactions on Vehicular Technology*, IEEE.
- *Internet of Things*, Elsevier.
- Journal of Autonomous Intelligence, Frontier Scientific Publishing.

2. Technical Program Committee Member

- IEEE GCON 2023.
- IEEE I3CS 2023.
- IEEE INDICON 2021.
- International Conference on Image Enhancement and Computer Vision (ICIECV) 2023.

3. IEEE Graduate Student Member.

4. General Secretary of Welfare Board under the Students' Gymkhana Council of IIITG.

5. General Secretary of Sports Board under the Students' Gymkhana Council of IIITG.

6. Member of Departmental Post Graduate Program Committee, CSE, IIITG.

7. Volunteer and participant of conferences: I3CS'15 and I3CS'16, NEHU Shillong.,

8. Finance Secretary of ANAKALYPSI'14 (a techno cultural fest), NEHU Shillong.

9. Finance Secretary 2014-15 CIPHER (a forum of department of IT), NEHU Shillong.

TECHNICAL STRENGTHS

Languages	C, C++, Python, Java
Tools	NetSim, iFogSim, MobFogSim, WorkflowSim, CloudSim, NS3, Contiki Cooja
Scripting & markup Languages	PHP, HTML, CSS
Document preparation	L ^A T _E X, Microsoft Office
Databases	MySQL
OS Environments	Unix, Windows

HOBBIES

- Cooking
- Playing Cricket
- Reading Novels
- Vegetable, Indoor and Outdoor Gardening

LINGUISTIC PROFICIENCY

- English, Hindi, Bengali and Assamese

REFERENCES

- Prof. Ferdous A. Barbhuiya** Professor (Department of CSE)
(Ph.D Supervisor) Indian Institute of Information Technology Guwahati, India
Contact No.: +91-9435118700
E-mail: ferdous@iiitg.ac.in
- Dr. Rakesh Matam** Associate Professor (Department of CSE)
(Ph.D Supervisor) Indian Institute of Information Technology Guwahati, India
Contact No.: +91-7086043858
E-mail: rakesh@iiitg.ac.in
- Prof. Gautam Barua** Professor (Department of CSE), Director IIIT Guwahati
(Chairman of the Ph.D doctoral Indian Institute of Information Technology Guwahati, India
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