

Barnana Baruah

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Education

2016-2021	Ph.D. in Computer Science & Engineering, <i>Reliability of Third Party in Security and Privacy Protocols</i> , Indian Institute of Information Technology Guwahati, Guwahati, India
2012-2014	M.Tech. in Computer Science & Engineering, National Institute of Technology Silchar, Silchar, India. C.P.I.: 9.13
2007-2011	B.E. in Computer Science & Engineering, Assam Engineering College, Gauhati University, Guwahati, India. Percentage: 81.1% Secured 1st Class 1st Position in CSE under Gauhati University at UG level
2005-2007	Higher Secondary (CBSE), Zinc Smelter Senior Secondary School, Visakhapatnam, India. Percentage: 89.2%
2005	Secondary (SEBA), Nowgong Mission High School, Nagaon, India. Percentage: 85.3% Certificate from N.S.U.I for securing 7th rank in Nagaon District in HSLC

Research Interests

Secure communication protocols, Blockchain, Security & privacy in IoT, VANET Security, Machine Learning based Classification, Secure Healthcare System, Post Quantum Cryptography

Teaching Interests

Data Structures, Formal Languages and Automata Theory, Analysis of Algorithms, Cryptography, Operating Systems, Software Engineering, C Programming

Teaching Experience

Aug'26-Till Date	Assistant Professor, Department of Computer Science & Engineering, Jorhat Engineering College, Jorhat, India Taught Formal Language and Automata Theory, Digital Systems
Feb'25-Aug'26	Assistant Professor, Department of Computer Science & Engineering, Barak Valley Engineering College, Sribhumi, India Taught Programming for Problem Solving, Cryptography and Network Security, Formal Language and Automata Theory, Data Structures, Database Management System, Design Thinking

Sept'21- Feb'25	Associate Professor, Department of Computer Science & Engineering & Associate Dean (Research), The Assam Kaziranga University, Jorhat, India Taught Programming for Problem Solving, Formal Language and Automata Theory, Algorithm Design, Cryptography, Data Structures, Software Engineering, Database Management System
Jun'21-Sept'21	Assistant Professor, Department of Computer Science & Engineering, ITER, Siksha 'O' Anusandhan University, Bhubaneswar, India Taught Algorithm Design
Aug'14-Dec'15	Assistant Professor, Department of Computer Science & Engineering, NITS Mirza, Kamrup, India Taught Formal Language and Automata Theory, Software Engineering, Cryptology and Security Systems, Data Structures, Principles of Compiler Design

Administrative Experience

Feb'25-Aug'26	Girls' Hostel Warden, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Research and Innovation Cell, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	In-charge of Debate Club, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Estate Management, Residence Allocation, Health Management of Samarth Portal, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Campus Maintenance Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Food Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Grievance Redressal Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Hostel Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Induction Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Institute Disciplinary Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Internal Complaint Committee (ICC), Barak Valley Engineering College, Nirala, Sribhumi, India
Mar'25- Aug'26	Internal Quality Assurance Cell (IQAC), Barak Valley Engineering College, Nirala, Sribhumi, India

Mar'25- Aug'26	Quarter Committee, Barak Valley Engineering College, Nirala, Sribhumi, India
Jun'24-Feb'25	Associate Dean (Research), The Assam Kaziranga University, Jorhat, India
Jun'24-Feb'25	Multidisciplinary Research Cell, The Assam Kaziranga University
Jun'23-Feb'25	KU Women Cell, The Assam Kaziranga University
Feb'23-Jun'24	Head of the Department at the Department of Computer Science & Engineering, The Assam Kaziranga University, Jorhat, India
Feb'15-Dec'15	Department Coordinator / Head of the Department of Computer Science & Engineering, NITS Mirza, Kamrup, India

Other Experience

Guided B.Tech Students of Barak Valley Engineering College for Summer Internship project “Hands-on Experience on AI Tools and Machine Learning Techniques” (1 July-31 July 2026)

Guided B.Tech Students of Jorhat Institute of Science & Technology for Summer Internship project “MERN-Based Student Life Management System” (4 July-4 August 2025)

Technical Program Committee of the 4th International Conference on Artificial Intelligence, Computing Technologies, Internet of Things (IoT) and Data Analytics (AICTA 2026), organized by the Department of Computer Science and Engineering, NIT Silchar

Question paper setter for B.Tech. Examination under Assam Science and Technology University

Question paper setter for B.E. Examination under Gauhati University

Appointed as Examiner for B.Tech. Examination under Assam Science and Technology University

Subjects Taught

Aug-Dec 2026: Formal Language and Automata Theory
Aug-Dec 2026: Digital Systems
Aug-Dec 2026: Software DevOps and Automation Laboratory
Jan-Jun 2026: Computer and Network Security
Jan-Jun 2026: Database Management System
Jan-Jun 2026: Database Management System Laboratory
Jan-Jun 2026: Design Thinking
Jul-Dec 2025: Formal Language and Automata Theory
Jul-Dec 2025: Data Structure
Jul-Dec 2025: Data Structure (Laboratory)
Jan-Jun 2025: Computer and Network Security
Jan-Jun 2025: Programming for Problem Solving
Jan-Jun 2025: Programming for Problem Solving Laboratory
Jul-Dec 2024: Information Security
Jul-Dec 2024: Operating Systems
Jul-Dec 2024: Operating Systems Laboratory

Jan-Jun 2024: Design and Analysis of Algorithms
 Jan-Jun 2024: Formal Languages and Automata Theory
 Jul-Dec 2023: Design and Analysis of Algorithms
 Jul-Dec 2023: Formal Languages and Automata Theory
 Jan-Jun 2023: Software Engineering
 Jan-Jun 2023: Cryptography and Network Security
 Jan-Jun 2023: Database Management System
 Jan-Jun 2023: Database Management System Laboratory
 Jul-Dec 2022: Data Structures and Algorithms
 Jul-Dec 2022: Data Structures and Algorithms Laboratory
 Jul-Dec 2022: Programming for Problem Solving
 Jul-Dec 2022: Programming for Problem Solving Laboratory
 Jan-Jun 2022: Software Engineering
 Jan-Jun 2022: Computer Applications in Pharmacy
 Jan-Jun 2022: Computer Applications in Pharmacy Laboratory
 Jul-Dec 2021: Programming for Problem Solving
 Jul-Dec 2021: Programming for Problem Solving Laboratory
 Jul-Dec 2021: Data Communication and Computer Networks
 Jul-Dec 2021: Internet of Things
 Jul-Dec 2021: Introduction to IoT and Private Cloud
 Jul-Dec 2021: Algorithm Design
 Jul-Dec 2015: Formal Languages and Automata Theory
 Jul-Dec 2015: Cryptology and Security Systems
 Jul-Dec 2015: Object Oriented Programming in C++
 Jul-Dec 2015: Object Oriented Programming in C++ Laboratory
 Jan-Jun 2015: Principles of Compiler Design
 Jan-Jun 2015: Principles of Compiler Design Laboratory
 Jan-Jun 2015: Neural Networks and Fuzzy Control
 Jul-Dec 2014: Software Engineering
 Jul-Dec 2014: Cryptology and Security Systems

Membership

IEEE Member

Reviewer of Journals/Conferences

IEEE Internet of Things Journal, International Conference on Intelligent and Cloud Computing, INDICON, International Conference on Intelligent Systems, Advanced Computing and Communication, IEEE SILCON, Peer-to-Peer Networking and Applications

Course / Workshop Attended

Five Days Self-Sponsored Online Short-Term Training Programme on “Machine Intelligence for Health Informatics and Wearable Device Sensor Data Analysis” organized by department of CSE, NIT Silchar, under the aegis of AI Impact Summit 2026 (27-31 January 2026)

TEQIP-III Sponsored Short-Term Course on “Modern Cryptography” at Indian Institute of Technology Kharagpur (17-21 September 2018)

Attended workshop on “IoT and Blockchain” organized by department of CSE, sponsored by TEQIP III at Indian Institute of Information Technology Guwahati (28-29 September 2019)

Workshop/ Bootcamp/ conference organized

Coordinator of Bootcamp on Drone Technology and Related Applications organized in collaboration with NIT Sicha and Jet Aerospace Aviation Center, supported by IHFC- TIH of IIT Delhi, under the project “Capacity Building for Human Resource Development in Unmanned Aircraft System (Drone related Technology)”, funded by MeitY, Government of India (9-13 February 2026)

Coordinator of Bootcamp on Drone Technology and Related Applications organized in collaboration with NIT Sicha and Jet Aerospace Aviation Center, supported by IHFC- TIH of IIT Delhi, under the project “Capacity Building for Human Resource Development in Unmanned Aircraft System (Drone related Technology)”, funded by MeitY, Government of India (8-12 September 2025)

Organizing Secretary at the 1st International Conference on Data Driven AI (ICDDA 2024) held at The Assam Kaziranga University, Jorhat, India (14-17 March 2024)

Coordinator of Student Development Program (SDP) on Data Structure and Algorithm for Placement and Higher Studies by Prof. Ratan Kumar Ghosh, Former Professor of CSE, IIT Kanpur and Visiting Faculty and Mentor, The Assam Kaziranga University (9-12 November 2022)

Training

Two Weeks Faculty Development Programme / Short Term Training Programme on “Induction Training Phase- I” organized by NITTTR Kolkata (20-31 July 2026)

“Induction Training Program” organized by DTE, Assam (25-26 July 2025)

Project on “Chord Protocol” at Indian Institute of Technology Guwahati

Technical Skills

MATLAB, AVISPA simulation tool, C/C++
Academic writing
Extensive experience of using LATEX

Publications

9 journal and 8 peer-reviewed conference papers; for more details please visit Google Scholar page at <https://scholar.google.com/citations?user=fG3l6P0AAAAJ&hl=en>

Journal Papers

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| Jan'25 | Atiya Khan, Saroj Kr. Biswas, Chukhu Chunka, Barnana Baruah , <i>Intelligent Sleep Apnea Detection by Advanced ML Using Single-Lead EEG Signal Data</i> , IEEE Sensors, 25(2), pp. 3859-3866 (Indexed by SCI (E) , Scopus , Inspec , EI) |
| Sep'24 | Deeksha Tripathi, Saroj Kr. Biswas and Barnana Baruah , <i>Data Analytics in Ensemble Learning for Effective Crop Yield Prediction</i> , Engineering Research Express, 6(3), pp. 1-23 |
| Mar'23 | Barnana Baruah and Subhasish Dhal, <i>A Security and Privacy Preserved Intelligent Vehicle Navigation System</i> , IEEE Transactions on Dependable and Secure Computing, 20(2), pp. 131-142 |
| Apr'21 | Barnana Baruah and Subhasish Dhal, <i>A Secure Road Condition Monitoring</i> |

Scheme in Cloud based VANET, Journal of Computer Communications (Elsevier), 174, pp. 131-142 (Indexed by **SCI (E)**, **Scopus**, **Inspec**, **Google Scholar**, etc.)

- Feb'19 **Barnana Baruah** and Subhasish Dhal, *An IoT based Secure Object Tracking System*, Journal of Wireless Personal Communications (Springer), 106(3), pp. 1209-1242 (Indexed by **SCI (E)**, **Scopus**, **DBLP**, **Inspec**, **Google Scholar**, etc.)
- Aug'18 **Barnana Baruah** and Subhasish Dhal, *A two-factor authentication scheme against FDM attack in IFTTT based Smart Home System*, Journal of Computers & Security (Elsevier), 77, pp. 21-35 (Indexed by **SCI (E)**, **Scopus**, **EI**, **CSI**)
- Dec'15 Saroj Kr. Biswas, **Barnana Baruah**, Nidul Sinha and Biswajit Purkayastha, *A Hybrid CBR Classification Model by Integrating ANN into CBR*, Journal of Services Technology and Management (Inderscience), 21(4/5/6), pp. 272-293 (Indexed by **(E)SCI**, **Scopus**)
- Jun'15 Saroj Kr. Biswas, **Barnana Baruah**, Biswajit Purkayastha and Manomita Chakraborty, *An ANN Based Classification Algorithm for Swine Flu Diagnosis*, Journal of Knowledge Based Computer Systems, 3(1), pp. 31-42
- Dec'14 Saroj K. Biswas, Nidul Sinha, **Barnana Baruah** and Biswajit Purkayastha, *Intelligent Decision Support System of Swine Flu Prediction using Novel Case Classification Algorithm*, Journal of Knowledge Engineering and Data Mining (Inderscience), 3(1), pp. 1-19 (Indexed by **ACM Digital Library**, **DBLP**, **Google Scholar**)

Conference Papers

- Mar'24 Anupam Pattanayak, **Barnana Baruah** and Subhasish Dhal, *Privacy-Preserved Covid and Inter BAN Communication Status Maintenance with Key and Random Value Update in Blockchain*, in Proceedings of the International Conference on Network Security and Blockchain Technology (ICNSBT 2024), Lecture Notes in Networks and Systems, Vol 1158, Springer, pp. 181-191
- Mar'24 Anil Kumar Dasari, Saroj K. Biswas, **Barnana Baruah**, Biswajit Purkayastha and Soumen Das, *Intrusion Detection System using Stacked Ensemble Learning with Light Gradient Boosting Machine and Decision Tree*, in Proceedings of the International Conference on Network Security and Blockchain Technology (ICNSBT 2024), Lecture Notes in Networks and Systems, Vol 1158, Springer, pp. 291-303
- Dec'23 Anupam Pattanayak, **Barnana Baruah** and Subhasish Dhal, *Automatic Privacy-Preserved Contact Tracing in Body Area Networks using Blockchain*, in Proceedings of the 20th India Council International Conference (INDICON 2023), IEEE Xplore
- Dec'23 Anupam Pattanayak, **Barnana Baruah** and Subhasish Dhal, *Privacy-Preserving Forward and Backward Contact Tracing in Body Area Networks using Blockchain*, in Proceedings of the 2nd IEEE International Conference on Data, Decision and Systems (ICDDS 2023), IEEE Xplore
- Jan'21 **Barnana Baruah**, Subhasish Dhal, *An Authentication Key Agreement Scheme for Secure Communication in Smart Grid*, in Proceedings of the 13th International Conference on Communication Systems & Networks (COMSNETS 2021), IEEE Xplore, pp. 1-9 (Indexed by **Scopus**, **DBLP**)

Jul'20	Barnana Baruah , Subhasish Dhal, <i>An Efficient Authentication Scheme for Secure Communication between Industrial IoT Devices</i> , in Proceedings of the 11 th IEEE International Conference on Computing, Communication and Networking Technologies (ICCCNT 2020), IEEE Xplore, pp. 1-7 (Indexed by Scopus , DBLP)
Jan'20	Barnana Baruah , Subhasish Dhal, <i>A Secure and Privacy-Preserved Road Condition Monitoring System</i> , in Proceedings of the 12 th International Conference on Communication Systems & Networks (COMSNETS 2020), IEEE Xplore, pp. 594-597 (Indexed by Scopus , DBLP)
Jun'19	Barnana Baruah and Subhasish Dhal, <i>An Intelligent Privacy Preserving Vehicle Navigation System</i> , in Proceedings of the IEEE Region 10 Symposium (IEEE TENSYP 2019), IEEE Xplore, pp. 521-526 (Indexed by Scopus , DBLP)

Achievements & Awards

Certificates of Appreciation at "Research Award Ceremony" at The Assam Kaziranga University
 Qualified "NTA UGC-NET December 2018" with PERCENTILE SCORE of 98.3812
 Qualified "GATE 2012" with GATE SCORE of 398 with 93.468 percentile
 Qualified "GATE 2011" with GATE SCORE of 384 with 91.06 percentile
 Awarded fellowship under Visvesvaraya PhD Scheme by MeitY, Govt. of India, 2017-2021
 Completed program requirements as an "IBM Certified Database Associate" from IBM
 Certificates of Merit from "ASSAM ENGINEERING COLLEGE MERIT AWARD FUND" for securing highest aggregate marks in 4th, 5th, 6th, 7th Semester B.E. Examination
 Placed among the top 10% in national standard examination by "INDIAN ASSOCIATION OF PHYSICS TEACHERS"
 Awarded GATE Scholarship, 2012-2014
 "NORTH-EAST COUNCIL" Scholarship, 2007-2011
 "ANUNDORAM BOROOAH AWARD CERTIFICATE" in 2005 by Planning & Development Department, Government of Assam
 Certificate from NIIT on "Programming Using C++"
 Certificate from NIIT on "Programming in C and Data Structures"

Extracurricular Activities

Certificate from WORLD VISION on 24 Hour Famine Programme
 IIITG Annual Institute Award for "Exemplary Hostel Wing" of IIITG
 Certificate Of Participation in a Seminar organized by NIIT
 Certificate Of Participation in a Seminar on General Science organized by ABC Tutorial centre
 Certificates from school and college for winning in various competitions in sports as well as cultural weeks

Personal Details

Date of Birth	:	February 25, 1989
Nationality	:	Indian
Marital Status	:	Married
Hobbies	:	Travelling, Interior decoration, Gardening
Languages	:	English, Hindi, Assamese
Permanent Address	:	Amolapatty Bezbaruah Colony, P.O. Itachali, Nagaon, 782003, Assam, India

References

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