Dibyajyoti Guha

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Area of Interests

Deep Learning, Computer Vision, Hyperspectral Imaging, Variational Bayes

Domain Expertise

Languages	C,C++, Python, Matlab
ML	Tensorflow, Keras
Matrix Algebra	Blind Source Separation, Hyperspectral Unmixing, Subspace/Manifold Learning

Subjects can teach

Machine Learning, Deep Learning, Computer Network, Theory of Computation, Linear Algebra, Information Theory

Education

1999-2003 **B.Tech in Computer Science and Engineering**, *Kalyani Govt. Engg. College*, University of Kalyani, India.

2009-2012 **M. S.**, *GS Sanyal School of Telecom*, IIT Kharagpur, India.
Performance Analysis of Modified Differentiated Service Enabled MPLS Linux Router

Jan'2013-Dec'2015 **Ph. D.**, *IIT Bhubaneswar*, India.
Probabilistic modeling of QoS and buffer management using Markov chain, Markov decision process in Telecom network, Wireless, Ad-Hoc networks under Dr. A.D. Banik.

Aug'2018-Feb'2021 **Postdoctoral Fellowship**, *Dept. of Electrical and Computer Engineering, National University of Singapore*, Singapore.
Representation Learning, Information Theoretic Approach in Machine Learning, Anomaly Detection Project in Industrial IoT

Profile Summary

- Github: https://github.com/dguhanus/
- ORCID: https://orcid.org/0000-0003-0735-3047
- Linkedin: https://sg.linkedin.com/in/dibyajyoti-guha-08117715
- DBLP: https://dblp.org/pid/140/3217.html
- Presently working as an Associate Professor at GITAM University, Hyderabad.
- Worked as postdoctoral research fellow on "Anomaly Detection Using LSTM-Based Variational Autoencoder in Unsupervised Data in Power Grid" at **Dept. of Electrical and Computer Engineering, National University of Singapore** with Prof. Biplab Sikdar for 2.5 years.
- 5 years in Software Industry (**HCL Technologies Ltd., Sipera Systems Inc.**) on Cisco IOS features like Cisco 3800 routers, VoIP protocol, VoIP Security, NAT traversal of SIP, TCP/IP, Transport layer Security, MPLS-Linux.

Selected Publication post PhD

- ***Dibyajyoti Guha***, R Chatterjee, Biplab Sikdar, "*Anomaly Detection Using LSTM-Based Variational Autoencoder in Unsupervised Data in Power Grid* ", **IEEE Systems Journal**, 17(3), pp. 4313-4323, April 2023, DOI: https:10.1109/JSYST.2023.3266554.
- Sivaraman V, ***Dibyajyoti Guha***, Biplab Sikdar, "*Optimal Pending Interest Table Size for ICN With Mobile Producers* ", **IEEE/ACM Transactions on Networking**, pp 1615 - 1628, 28(4), May 2020, DOI: https://doi.org/10.1109/TNET.2020.2988713.
- Sivaraman V, ***Dibyajyoti Guha***, Biplab Sikdar, "*Towards Seamless Producer Mobility in Information Centric Vehicular Networks* ", **2020 IEEE 91st Vehicular Technology Conference (VTC2020-Spring)**, pp 1 - 5, 2020, DOI: 10.1109/VTC2020-Spring48590.2020.9129238.
- U.N. Kar, D. Dash, D. Sanyal, ***Dibyajyoti Guha***, S. Chattopadhyay, "*A Survey of Topology-Transparent Scheduling Schemes in Multi-Hop Packet Radio Networks*", **IEEE Communications Surveys & Tutorials** (IF: 17.18), 19(4), pp. 2026 - 2049, 2017, DOI: https://doi.org/10.1109/COMST.2017.2739
- R. Chatterjee, T. Bandyopadhyay, D. K. Sanyal, ***Dibyajyoti Guha***, "*Dimensionality Reduction of EEG Signal using Fuzzy Discernibility Matrix* ", **10th International Conference on Human System Interactions (HSI)**, Ulsan University, South Korea, 17-19 July 2017. DOI: 10.1109/HSI.2017.8005014
- R. Chatterjee, ***Dibyajyoti Guha***, D.K. Sanyal, S. Mohanty, "*Discernibility Matrix based Dimensionality Reduction for EEG Signal* ", **IEEE Tencon**, 2016, DOI: https://doi.org/10.1109/tencon.2016.7848530

Selected Publication during PhD

- ***Dibyajyoti Guha***, A.D. Banik, "*On the renewal input batch arrival queue under single and multiple working vacation policy with application to EPON*", **Information Systems and Operational Research (INFOR)**, Taylor & Francis (impact factor: 0.3), Vol. 51 Issue 4, pp. 175-191, 2013, DOI: https://doi.org/10.3138/infor.51.4.175
- ***Dibyajyoti Guha***, A.D. Banik, V. Goswami, "*Equilibrium balking strategies in renewal input batch arrival queue with multiple and single working vacation of the server* ", **Performance Evaluation**, (IF: 1.613), Elsevier, Vol 94, pp. 1-24, 2015, DOI: https://doi.org/10.1016/j.peva.2015.09.001
- ***Dibyajyoti Guha***, A.D. Banik, V. Goswami, "*Algorithmic computation of steady-state probabilities in an almost observable GI/M/c queue with or without vacations under state dependent balking and reneging*", **Applied Mathematical Modelling** (IF:2.35), Elsevier, Vol 40, pp. 4199-4219, 2016, DOI: https://doi.org/10.1016/j.apm.2015.11.018
- Gopinath Panda, ***Dibyajyoti Guha***, A.D. Banik, V. Goswami, "*Equilibrium Balking Strategies In Renewal Input Queue With Bernoulli-Schedule Controlled Vacation And Vacation Interruption*", **Journal of Industrial and Management Optimization**, IF:1.18, (American Institute of Mathematical Sciences), Volume 12, Number 3, July 2016 pp. 851-878, DOI: 10.3934/jimo.2016.12.851
- Gopinath Panda, ***Dibyajyoti Guha***, A.D. Banik, V. Goswami, "*Stationary Analysis and Optimal Control Under Multiple Working Vacation Policy in a GI/M(a,b)/1 Queue*", **Journal of Systems Science & Complexity** (IF: 0.55), Springer, Vol 30, pp 1 – 21, 2017, DOI: https://doi.org/10.1007/s11424-017-6172-y

Work Experience

Academic

July'2022– Till date — **Associate Prof.**, *GITAM University*, India.
Dept: CSE, Courses Taught: Data Structure and Algorithms, Machine Learning, Deep Learning

March'2021– Till date **Asst. Prof.**, *International Management Institute Kolkata*, India.
Dept: IT and Systems, Courses Taught: Blockchain

Aug'2018– Feb'2021 **Postdoctoral fellow**, *National University of Singapore*, Singapore.
Anomaly detection & intrusion detection in Unsupervised data using Variational Bayes, Recurrent Auto Encoder

May'2017– Aug'2018 **Asst. Prof.**, *International Management Institute Kolkata*, India.
Dept: IT and Systems, Courses Taught: Management Information System, Cloud Computing

Jan'2016- May'2017 **Asst. Prof.**, *KIIT University* , Bhubaneswar, India.
Courses taught: Automata and Theory of Computation, Machine Learning, Computer Networks.
Research: **EEG signal processing and Pattern classification for left/right hand movement detection for Brain computer interface**.

Industrial Working

Oct'2006- Sept'2008 **Senior Software Engineer**, *Sipera Systems Inc.*, Hyderabad, India (start-up company).
Sipera Systems (http://www.sipera.com/) is a start-up company which is acquired by Avaya in 2011. We have grown from 35 Engineers to 70 Engineers from 2006 to 2008. Sipera develops a VoIP-NAT device for protecting VoIP servers of Financial Institution like Lehman Brothers, Goldman Sachs, Wells Fergo.

Apr'2004- Oct'2006 **Member Technical Staff**, *HCL Technologies Ltd. Cisco ODC*, Chennai, India.
Testing and bug fixing of ATM functionalities over T1/E1 as physical layer wherein ATM functionalities are provided from Mother board of Cisco Routers, VoIP Gateways.

References

1. Dr. Abhiit Dutta Banik, Associate Professor, IIT Bhubaneswar,
   Address: Room 301, SBS Building, Argul Campus
   Bhubaneswar, Orissa
   email: adattabanik@iitbbs.ac.in, mob: +91 90830 97389, Land: +91 6747135108
2. Prof. Sant Sharan Pathak, Dept. of Electronics and Electrical Communication Engineering,
   Address: Electronics and Electrical Communication Engg, IIT Kharagpur
   Kaharagpur-721306
   email: ssp@ece.iitkgp.ac.in, mob: +91 98321 76238, Land: +91 3222 283540
3. Dr. Biplab Sikdar, Professor, Electrical & Computer Engineering,
   Address: Blk E4, Engineering Drive, National University of Singapore
   Phone: +65 9298 4550, email: bsikdar@nus.edu.sg