

DR. DEBORSI BASU

Post-doctoral Researcher, **CONNECT Research Center, Trinity College Dublin, Ireland,**
April'25 to Present on '6G-AI'

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West Bengal, India +91-7278027362 <https://sites.google.com/view/deborsi-basu/home>

<https://www.linkedin.com/in/deborsi-basu-8364a6103/>

<https://github.com/orgs/VIRTUAL-CODER/teams/5g-iost>



WORKING EXPERIENCE

Post-Doc. Researcher, Dept. of Comp. Sc. & Statistics

Trinity College Dublin, The University of Dublin, Ireland

April, 2025 – Present Dublin, Ireland

- AI-driven ORAN Framework for 6G Networks
- ORAN, vRAN, AI-driven Controller Design

Ph.D. Research Intern - Associate

Samsung (R&D) Research India, Bangalore, Karnataka, (SRIB)

March 2023 – August 2023 Bangalore, India

- Project Title:** B5G and 6G core network architecture development leveraging Software-Defined Networking (SDN) and Network Function Virtualization (NFV).

Project Associate and Coordinator

Telecommunications Standards Development Society, India (TSDSI)

Aug 2020 – Present Delhi, India

- Project Title:** Dynamic Joint Deployment of SDN Controllers and Hypervisors for Software-defined 5G and Beyond Communication Networks.

Teaching and Laboratory Assistant

Computer Networks Laboratory

Aug 2019 – Present IIT Kharagpur, India

- Network Design and Simulation Labs, Advanced Operating System Design, Data Structure & Object Representation, Advanced Graph Theory, Network Optimization.

SKILLS AND EXPERTISE

Professional Engineering Skills

- Courses Undertaken in Computer Sc. Engg.:** Advanced Data Structure, Advanced Graph Theory, Advanced Operating System Design, Communication Networks, Cryptography and Network Security, Computer Arch. Design, Artificial Intelligence & Machine Learning, Computer Networks.
- Courses Undertaken in Elec. & Comm.:** Analog & Digital Comm., Digital Signal Processing, Signal and Control System, Microelectronics and VLSI, RF and Microwave Systems, Wireless and Mobile Comm., Satellite Comm., Analog and Digital Electronics.
- Courses Undertaken in Mathematics:** Linear Algebra, Numerical Method, Vector Analysis, Integral Calculus, Telecom. Opt., Probability theory.

Programming and Computational Skills

- Programming Languages and Tools:** Python, C, MATLAB, JAVA, Gurobi, Open5G, CPLEX Optimizer.
- Network Simulation Tools:** MININET, NS3, MultiSim, pSpice, Tanner EDA tools.

Soft Skills

- Strong communication and presentation skills.
- Leadership and coaching skills.

EDUCATION

Ph.D. in CSE (Computer Networks - SDN, NFV, 5G)

IIT Kharagpur, Ind. & Vanderbilt Univ., U.S.A

July, 2018 – June 2024 || Course CGPA: 8.80 / 10

M.Tech in ECE (Spcl. in Communication Engineering)

Kalyani Govt. Engg. College, WB, India

2016 – 2018 || CGPA: 9.83 / 10

B.Tech in Elec. & Com. Eng. (ECE)

Heritage Inst. of Tech. Kolkata, WB, India

2012 – 2016 || CGPA: 9.45 / 10

Higher Secondary in Science

Barrackpore Govt. High School (WBCHSE)

2010 – 2012 || Aggregate: 84.85%

Secondary Exam

Barrackpore Govt. High School (WBBSE)

2009 – 2010 || Aggregate: 83.66%

INTERNSHIPS/ TRAINING/PROJECTS

Machine Learning Engineer

Amazon Web Service - Udacity

June, 2021 – December 2021

AI and ML using Python

Girls Script, India

April, 2021 – December 2021

FDP on Blockchain Technology

IIT Roorkee & Finland Labs

May, 2020 (7 days)

FDP on AI and ML using Python

IIT Roorkee & Finland Labs, India

May, 2020 (7 days)

Cancerous Cell detection using MTT

KGEC, Kalyani, WB, India

February, 2017 – May 2018

Wireless FM Trans. With Noise Cancellation Feature

HIT-Kolkata, WB, India

Aug. 2015 – May 2016

- Excellent problem solving skills, teamwork and collaboration skills.

THESIS DETAILS - PHD, M.TECH, & B.TECH

- **PhD Thesis Title** - 'Efficient Resource Management in Next-Generation Softwarized Networks', under the supervision of **Prof. Raja Datta** (IIT Kharagpur, India) and **Prof. Uttam Ghosh** (SACS, MMC, USA).
- **M. Tech Thesis Title** - 'Study the Variations of Complex Permittivity to Detect Different Stages of Cancer and Realization of a Relevant Reconstruction Algorithm using Microwave Tomography', under the supervision of **Prof. Kabita Purkait** (KGECE, WB, India) and **Prof. (Dr.) Partha Pratim Sarkar** PhD Mentor, Unv. of Kalyani, WB, India.
- **B. Tech Thesis Title** - 'Design and Implementation of a Smart & Portable Wireless FM Transmitter for Wide Range Communication', under the supervision of **Prof. Sayantani Dutta** (HIT Kolkata, WB, India).

RESEARCH INTERESTS

- 5G & Beyond, 6G, Software Defined Networking (SDN), Network Function Virtualization, Metaverse, OpenFlow, Distributed Systems, Network Performance Optimization, Distributed Computing, Machine Learning, Cloud and Edge Computing, Artificial Intelligent, Network Scalability, Issues, Network Security Issues, Game theoretic Approaches, Federated Cloud and Edge, Computing, Deep Learning in Data off-loading, Machine Learning, Federated Learning, and Related Application areas, etc.
- WiFi Sensing using Tomography, Microwave communication, e-Health applications, IoT in Healthcare, UAV networks for disaster management, Vehicular Networks, and Next-generation mobile computing.

AWARDS AND ACHIEVEMENTS

- Winner of **iHub-Data Mobility Fellowship 2022** by IIIT Hyderabad, India for the project titled 'SoftDrive: vSDN-enabled Edge Data Sharing in 5G-driven Vehicular Networks', INR 50,000 (National Conference) and INR 2,00,000 (International Conference).
- Winner of the prestigious **Richard E. Merwin Student Scholarship** from **IEEE Computer Society** in 2022.
- **Best Research Project Award 2020** at ICICC (International Conference on Innovative Computing and Communication) by UIILA, February 2021.
- Participated in **IEEE Xtreme 14.0 and 15.0** and served as **IEEE Kharagpur Section Lead** in 2020.
- **Global Academic Excellence Award 2021** at **Global Edu. Conclave'21**, June 2021.
- Winner of the prestigious **Richard E. Merwin Student Scholarship** from **IEEE Computer Society** in 2020.
- GATE 2017 - (GATE Percentile - 96.3%), GATE 2016 - (GATE Percentile - 90%), IEO Qualified in 2016 (State Rank 33 in West Bengal).
- **Unv. Silver Medal & Unv. Topper** in Spec. in Comm. Engg. 2018 (M.Tech - ECE - KGECE, Kalyani, West Bengal, India).
- **Best Paper/Poster Award**: Springer ICIMSAT'19, OPIC-2020 (IEEE ACSIR CSIO, SB, India, IEEE R10), IEEE GCAIoT'20, IEEE CS BDC SS'21, Mindshare YUVA'21.
- **Travel/Conference Grants**: IEEE ComSoc (IEEE ICC'22, IEEE ANTS'22, IEEE Infocom'21, GlobeCom'20, WCNC'20), ACM SIGCOM STG (ACM HotMobile'20, ACM MobiSys'21, IEEE / ACM COMSNETS'22, ACM ICDCN'23), IKDD CDS'23 and 28th COMAD'23.
- **Fellowship and Contingency Grants**: IndoML'22, IEEE ComSoc Summer School 2021 and 2022, ACM Summer and Winter Schools 2021.

INTERNSHIPS/ TRAINING/PROJECTS

Wi-Fi in Howrah New Delhi
Rajdhani Express

Eastern Railway, Howrah, WB, India

📅 July 2015 (15 days)

Microelectronics Tech. and VLSI
Design

Jadavpur University, WB, India

📅 June 2015 (30 days)

Silver, Gold, Platinum Certified
Engineer

BSNL, India

📅 Sept. 2014 - Sept. 2015

Advanced Telecom. With spec. In
Mobile Comm. Tech.

BSNL, India

📅 June 2014 (15 days)

ADMINISTRATIVE

Associate Coordinator PhD
Placement and Internship Cell

CDC, IIT Kharagpur, India

📅 May 2022 - Present

Training and Placement Coordinator

**T&P Cell of Kalyani Government
Engineering College, WB, India**

📅 July 2017 - Dec. 2019

Training and Placement Coordinator
& Dept. Representative of ECE

**T&P Cell of Heritage Inst. of Technology,
Kolkata, WB India**

📅 July 2015 - July 2016

LANGUAGES KNOWN

English

Hindi

Bengali



HOBBIES

- Student Mentor and Career Guidance Session for UG and PG students
- Musician (Play Tabla, Guitar)
- Writer in various Magazine and Books
- Content Creator, Drama
- Photography, Videography, Visual Animation

PROJECTS & RELATED PUBLICATIONS

1. "Multi-cluster Dynamic Load Balancing in vSDN-enabled 5G Heterogeneous Network for Smart Cyber-Physical Systems" – **IEEE/ACM COMSNETS'22**, Bangalore, India, 3-8 Jan. 2022.
2. "DRIVE: Dynamic Resource Introspection and VNF Embedding for 5G using Machine Learning," - **IEEE Internet of Things Journal** 2022.
3. "SoftDrone: Softwarized 5G Assisted UAV Networks for URLLC Resource Sharing using ML-Driven Slice Coordination Technique" – **Computers & Electrical Engineering**, Elsevier, 2022.
4. "QoS-aware Controller/Hypervisor Placement in vSDN-enabled 5G Networks for Time-critical Applications" – **IEEE INFOCOM 2021**, Vancouver, Canada, USA, May 2021
5. "A Reverse Path-Flow Mechanism for Latency Aware Controller Placement in vSDN Enabled 5G Network" – **IEEE Trans. on Ind. Informatics** 2020.
6. "FlexArch: Flexible Controller Placement Architecture in Hypervisor Assisted 5G Network using vSDN," – **IEEE GLOBECOM 2020**, Seoul, South Korea, Dec. 2020.
7. "Softwarized Network Function Virtualization for 5G: Challenges and Opportunities" – **Chapman & Hall/CRC Press, US, 2019**.
8. "Adaptive Control Plane Load Balancing in vSDN Enabled 5G Network" – **IEEE COMSOC MMTC Communications** – **Frontiers** 2020.
9. "Optimized Controller Placement Problem for Soft Handover in Virtualized 5G Network" – **IEEE WCNC Workshops 2020**, Seoul, South Korea.
10. My Google Scholar Account - [click here](#)

TPC MEMBER/ORGANIZER/REVIEWER

1. **Flagship Journals:** IEEE Transactions on Network and Service Management, IEEE Transactions on Network Science and Engineering, IEEE Internet of Things Journal, IEEE Access Journal, Computer Communication - Elsevier, Computer Networks - Elsevier, etc.
2. **Flagship Conferences:** IEEE INFOCOM, IEEE ICC, IEEE GLOBECOM, IEEE WCNC, ACM ICDCN, IEEE CONECCT, IEEE SECON, IEEE CCNC, IEEE ICSPIS, IEEE PhD EDITS, etc.
3. **Flagship Magazine:** IEEE Communication Letters, IEEE Networks, IEEE consumer electronics magazine, etc.

VOLUNTARY CONTRIBUTIONS

1. **Section Student Representative (SAC Representative):** IEEE Kharagpur Section (R10) in 2022.
2. **Chairperson:** IEEE Student Branch IIT Kharagpur of IEEE Kharagpur Section in 2022.
3. **Founding Chairperson and Secretary** of IEEE Computer Society Student Branch Chapter, IIT Kharagpur in 2020 and 2021 respectively.
4. **SAC Member:** IEEE AP-MTTS IIT KGP in 2018-19.

EXTRA CURRICULAR ACTIVITIES

MENTOR at **MENTOR4YOU** of IEEE YP Bangalore Section, **IEEE REM Help Desk**, **CS SYP Scholarship Outreach Program 2021**, and **IEEE MOVE India Initiative** - IEEE USA and IEEE Bangalore Section(R10).

Others: IEEE Volunteer (6+ years), ACM, IET Student Members, Senior Member of CRY PB IIT KGP and Born 2 Help - Kharagpur, Associated with *Hostel Cricket Team*, Parade Champion'12, High Schl. at State Level.

MEMBERSHIPS

- ★ Graduate Student Member IEEE
- ★ Student Member ACM
- ★ Student Member IET
- ★ Student Member IFERP
- ★ Global Member of Internet Society
- ★ Global Brand Ambassador IEEE
- ★ Global Brand Ambassador IEEE CS
- ★ Life Member and Fellow I2OR
- ★ Life Member Born2Help, India
- ★ Life Member CRY, India

CERTIFICATIONS

- ★ Intro. to Prog. using JAVA - **Udemy**
- ★ Intro. to Prog. using Python - **Udemy**
- ★ Python for Everybody - **Unv. of Michigan**
- ★ Python in DS - **Unv. of Michigan**
- ★ Intro. to SDN - **The Unv. of Chicago**

RECOMMENDATIONS

- ★ **Name:** **Prof. Raja Datta, Ph.D, SMIEEE**
Designation: Head of CIC, Former Head of GSSST, Professor at the Dept. of E & ECE, IIT Kharagpur, India.
Mail id: rajadatta@ece.iitkgp.ac.in
- ★ **Name:** **Prof. Uttam Ghosh, Ph.D, SMIEEE**
Designation: Associate Professor of Dept. of CS and DS, School of Applied Computational Sciences, Meharry Medical College, TN, USA
Mail id: ughosh@mmc.edu
- ★ **Name:** **Prof. Kabita Purkait**
Designation: Associate Professor of Dept. of ECE, KGECE, Kalyani, WB, India.
Mail id: kabitakgec2008@gmail.com
- ★ **Name:** **Prof. (Dr.) Partha Pratim Sarkar**
Designation: Professor/Senior Scientific Officer, University of Kalyani, Dept. of Engg. & Technological Studies, Kalyani, Nadia (W.B)-741235.
Mail id: parthabe91@yahoo.co.in
- ★ **Name:** **Dr. Pushpita Chatterjee**
Designation: Post-Doc Fellow at TSU, Nashville, TN, USA.
Mail id: pushpita.c@ieee.org

OTHER DETAILS

- ★ **Date of Birth:** 9th August 1994
- ★ **Gender:** Male
- ★ **Marital Status:** Single
- ★ **Country of origin and residence:** India