

Rajib Debnath

Guest Faculty, Department of CSE,
Tripura University (A Central
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Personal Details

- **Name:** Rajib Debnath
- **Father's Name:** Shrish Ch. Debnath
- **Date of Birth:** 25th June, 1988
- **Nationality:** Indian
- **Category:** OBC
- **E-Mail:** rajibdebnath.cse@gmail.com/ rajib.cse@tripurauniv.in
- **Contact No.:** +91-9862024392, +91-7005199517
- **Residential Address:** College Tilla, Professor Para, Near Bijoy Apartment, Agartala, West, Tripura - 799004, India

Education

- 2016–
Present **Pursuing Ph.D. in Computer Science & Engineering**, Tripura University (A Central University), Suryamaninagar, India-799022.
Thesis Entitled: Detection of Weapon Along with Profile in Video
Registration No.: Ph.D/10/CSE/07/16, Dated: 26.09.2016
- 2010–2012 **M. Tech in Computer Science & Engineering**, Tripura University (A Central University), Suryamaninagar, India-799022.
Grade - B | Marks: **72.30%**
- 2006–2010 **B. Tech in Information Technology**, Bengal Institute of Technology & Management (BITM) under West Bengal University of Technology (**WBUT**), Shantiniketan, Bolpur, West Bengal, India.
Grade/ DGPA - **7.0**

Experience

- 01/01/2021–
Present **Guest Faculty**, Department of Computer Science & Engineering, Tripura University (A Central University), Suryamaninagar, Tripura, India – 799022.
- 16/09/2019–
07/12/2020 **Junior Research Fellow**, DRDO, Govt. of India Funded Project, Entitled *Development of Object Detection Techniques from Degraded Complex Video Sequences Due to Dynamic Variation of Scenes by Different Atmospheric Conditions for Security & Surveillance*, in the Department of Computer Science & Engineering, Tripura University (A Central University), Tripura, India.

26/12/2013–31/08/2014 **Research Assistant**, DeitY, MCIT, New Delhi, Govt. of India Funded Project, Entitled *Creation of a Visual Face Database of North-Eastern People & Implementation of Techniques for Face Identification*, in the Department of Computer Science & Engineering, Tripura University (A Central University), Tripura, India.

28/05/2012–25/12/2013 **Project Assistant**, DeitY, MCIT, New Delhi, Govt. of India Funded Project, Entitled *Creation of a Visual Face Database of North-Eastern People & Implementation of Techniques for Face Identification*, in the Department of Computer Science & Engineering, Tripura University (A Central University), Tripura, India.

Area of Interest

- Image and Video Processing
- Computer Vision
- Security & Surveillance
- Machine Learning
- Pattern Recognition

Language Known

- C, Java, Python, Matlab, PHP, HTML, LaTeX

Journal Publications

- **Rajib Debnath**, and Mrinal Kanti Bhowmik, “**A comprehensive survey on computer vision based concepts, methodologies, analysis and applications for automatic gun/knife detection**”, *Journal of Visual Communication and Image Representation*, Indexed by Science Citation Index Expanded(**SCIE**), Volume 78, 2021, pp. 103165, ISSN 1047-3203, DOI: <https://doi.org/10.1016/j.jvcir.2021.103165>. **Impact Factor: 2.678**
- **Rajib Debnath**, and Mrinal Kanti Bhowmik, “**A Novel Framework for Automatic Localization of Gun Carrying by Moving Person Using Various Indoor Outdoor Mimic and Real time Views/Scenes**”, *IET Image Processing*, Indexed by Science Citation Index (**SCI**), Volume 14, Issue 17, December 2020, pp. 4663–4675, Print ISSN 1751-9659, Online ISSN 1751-9667, DOI: 10.1049/iet-ipr.2020.0706. **Impact Factor: 2.373**

Conference Proceedings

- **Rajib Debnath**, and Mrinal Kanti Bhowmik, “**Deep Classification of Gun Carried by Moving Persons Using Proposed TUV D-CSA Dataset**”, *In-press, 8th International Doctoral Symposium on Applied Computation and Security Systems (ACSS) 2021*, Organized by University of Calcutta, India, Held on 9-10 April, 2021, Published by Springer.
- **Rajib Debnath**, and Mrinal Kanti Bhowmik, “**Automatic Visual Gun Detection Carried by A Moving Person**”, *Proceedings of 15th (IEEE) International Conference on Industrial and Information Systems (ICIIS) 2020*, Organized by Indian Institute of Technology (IIT) Ropar, India, from 26-28 Nov, 2020, Published by **IEEE**, DOI: 10.1109/ICIIS51140.2020.9342681.

- **Rajib Debnath**, Anu Singha, Biswajit Saha and Mrinal Kanti Bhowmik, “**A Comparative Study of Background Segmentation Approaches in Detection of Person with Gun under Adverse Weather Conditions**”, *Proceedings of 11th International Conference on Computing, Communication And Networking Technologies (ICCCNT 2020)*, Organized by Indian Institute of Technology (IIT) Kharagpur, West Bengal, India, 1-3 July, 2020, Published by **IEEE**, DOI: 10.1109/ICCCNT49239.2020.9225409
- **Rajib Debnath**, and Mrinal Kanti Bhowmik, “**Moving Object Detection Under Sudden Change of Illumination: A Review**” (March 22, 2019). *International Journal of Computational Intelligence & IoT*, Vol. 2, No. 3, 2019, pp: 611–616, ISSN: 1556–5068. Available at SSRN: <https://ssrn.com/abstract=3358306>
- A. K. Ghosh, **Rajib Debnath**, U. Das and M. K. Bhowmik, "**Surface Plasmon Resonance Spectroscopy Observed in Kretschmann Prism System with Titanium and Gold Thin Films**", Proceedings of *Second International Conference on Material Science (ICMS 2017)*, Organized by Department of Physics, Tripura University (A Central University), Tripura, Feb. 16-18, 2017 (paper no. 10TFSS).
- A. K. Ghosh, **Rajib Debnath**, and M. K. Bhowmik, "**Analysis of Surface Plasmon Resonance for Incoherent Light Sources**", Proceedings of *Second International Conference on Material Science (ICMS 2017)*, Organized by Department of Physics, Tripura University (A Central University), Tripura, Feb. 16-18, 2017 (paper no. 07ST).
- Goutam Majumder, **Rajib Debnath**, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee and Mita Nasipuri, “**Image Registration of North-Eastern Indian (NEI) Face Database**”, *1st International Conference on Intelligent Infrastructure*, organized by Computer Society of India Kolkata Chapter (CSI 2012), Science City, Kolkata, India, published by McGraw Hill, pp. 286-290, Dec 1-2, 2012, ISBN-13: 978-1-25-906170-7, ISBN-10: 1-25-906170-1.
- Kankan Saha, **Rajib Debnath**, Mrinal Kanti Bhowmik, Debotosh Bhattacharjee, and Mita Nasipuri, “**North-East Indian Face Database: Its Design and Aspects**”, Proceedings of the *4th International Conference on Advances in Recent Technologies in Communication and Computing (ARTCom 2012)*, Bangalore, India, organized by the Association of Computer Electronics and Electrical Engineers (ACEEE), published by IET, **Electronic ISBN: 978-1-84919-929-2, DOI: 10.1049/cp.2012.2546**
- Mrinal Kanti Bhowmik, Arup Ratan Bhowmik, **Rajib Debnath**, Debotosh Bhattacharjee, "**A Comparative Studies Holistic & Local Feature-based Face Recognition Techniques using Optical and Infrared (IR) Images**", *3rd National Conference on Emerging Trends and Applications in Computer Science*, St. Anthony's College, Shillong, India, pp:102-114, 30-31 March, 2012, published by **IEEE xplore**.

Conference/ Seminar Presentation

- Presented a paper on “**Deep Classification of Gun Carried by Moving Persons Using Proposed TUV-D-CSA Dataset**”, in the *8th International Doctoral Symposium on Applied Computation and Security Systems (ACSS) 2021*, 9-10 April, 2021, Organized by University of Calcutta, Kolkata, India.
- Presented a paper on “**Automatic Visual Gun Detection Carried by A Moving Person**”, in the *15th (IEEE) International Conference on Industrial and Information Systems (ICIIS)*, 26-28 November, 2020, Organized by Indian Institute of Technology (IIT) Ropar, Punjab, India.

- Presented a paper on “**A Comparative Study of Background Segmentation Approaches in Detection of Person with Gun under Adverse Weather Conditions**”, in the 11th *International Conference on Computing, Communication And Networking Technologies (ICCCNT 2020)*, 1-3 July, 2020, Organized by Indian Institute of Technology (IIT) Kharagpur, West Bengal, India.
- Presented a paper on “**Moving Object Detection under sudden Change of Illumination: A Review**”, in the *International Conference on Computational Intelligence & IoT (ICCIoT 2018)*, 14-15 December 2018, Organized by National Institute of Technology (NIT) Agartala, Tripura, India.
- Presented a paper on “**Surface Plasmon Resonance Spectroscopy Observed in Kretschmann Prism System with Titanium and Gold Thin Films**”, in the *Second Intl. Conference on Material Science (ICMS 2017)*, Feb. 16-18, 2017, Organized by Department of Physics, Tripura University (A Central University), Tripura, (Paper ID: 10TFSS).
- Presented a paper on “**Analysis of Surface Plasmon Resonance for Incoherent Light Sources**”, in the *Second Intl. Conference on Material Science (ICMS 2017)*, Feb. 16-18, 2017, Organized by Department of Physics, Tripura University (A Central University), Tripura, (Paper ID: 07ST).
- Presented a paper on “**North-East Indian Face Database: Its Design and Aspects**”, in the 4th *International Conference on Advances in Recent Technologies in Communication and Computing, ARTCom 2012*, October 19-20, 2012, Organized by Association of Computer Electronics and Electrical Engineers (ACEEE), Bangalore, India.
- Presented a paper on “**Comparative Studies on Holistic and Local Feature-based Face Recognition Techniques Using Optical and Infrared Images**”, in the 3rd *National Conference on Emerging Trends and Application in Computer Science (NCETACS 12)*, March 30-31, 2012, Organized by Department of Computer Science and Internal Quality Assurance Cell, St. Anthony’s College, Shillong – 793001, Meghalaya, India.

— Fellowship/ Awards:

- Selected for a **Fellowship** for Attending “**ISI-SU Autumn School on Machine Intelligence and Applications**”, during September 22-26, 2014, held at Sikkim University, Gangtok, Organized jointly by Machine Intelligence Unit (MIU), Indian Statistical Institute (ISI) Kolkata, and Department of Computer Applications, Sikkim University, Gangtok, Sikkim

— Invited Talk

- Delivered a Talk as a Resource Person in **Short Term Training Programme (STTP)** on “**Computational Information Processing and Data Security**”, held on 22.02.2016 to 02.03.2016, organized by Department of Information Technology and Funded by University Grants Commission (UGC), IQAC, Bir Bikram Memorial College (BBMC), Tripura

— Seminars / Courses / Workshop attended

- Attended MHRD Initiative Global Initiative of Academic Networks (GIAN) course on “**Image and Video Forensics**”, Organized by Department of Computer Science and Engineering, Tripura University, 12-16 March, 2018.
- Attended MHRD Initiative Global Initiative of Academic Networks (GIAN) course on “**Contrast Enhancement in Poor Visibility**”, Organized by Department of Computer Science and Engineering, Tripura University (A Central University), 5-9 March, 2018.

- Workshop on “**Photonics, Electronics, Nano Technology, Integrated Circuits and Systems**”, from 29.02.2016 to 04.03.2016 at Tripura University, organized by Institute of Radio Physics and Electronics, University of Calcutta in collaboration with Department of Electrical Engineering, Tripura University, India.
- 18th Workshop on “**Computational Information Processing**”, from 04.02.2016 to 05.02.2016 at Dasaratha Deb Memorial College, Khowai, Tripura, organized by Electronics and Communication Sciences Unit, Indian Statistical Institute (ISI), Kolkata, India.
- National Level Workshop on “**Computational Aspects of Inflammatory Pain Related Diseases**”, on 20.11.2015, organized by department of Computer Science & Engineering, Tripura University (A Central University), Tripura, India.
- Two Days National Workshop on “**Emerging Areas in Wireless Networks & Communication**”, from 01.08.2015 to 02.08.2015 at Tripura University, Jointly organized by The Institute of Engineers (India), Tripura State Centre & Department of Computer Science & Engineering and Department of Information Technology, Tripura University (A Central University), Tripura, India.
- Workshop on “**North-East Summer Workshop in Analysis and Probability 2015 (NE-SWAP2015)**”, from 27.06.2015 to 30.06.2015 at Tripura University, organized by Department of Mathematics in collaboration with Indian Statistical Institute (ISI), Bangalore, India.
- Author Workshop on “**How to Use Online Resources and Develop Skills to Write and Publish**”, on 25.03.2015, organized by **Wiley** in collaboration with Central Library, Tripura University, at Tripura University, Agartala
- Workshop on “**Fundamentals of Image Analysis and Pattern Recognition**”, from 06.02.2015 to 08.02.2015 at Tripura University, organized by Department of Computer Science & Engineering in collaboration with Department of Information Technology, Tripura University (A Central University), Tripura, India.
- Author Workshop on “**Skill Development to Write Scientific Literature, Quality Improvement of Manuscript for Publication Success**” on 18.11.2014, organized by **Springer** in collaboration with Central Library, Tripura University, at Tripura University, Agartala.
- Author Workshop on “**Understanding the books & Journal Article Publishing Process**”, on 26.09.2014, organized by **Elsevier** in collaboration with Central Library, Tripura University, at Tripura University, Agartala.
- Workshop on “**Activities of Society for Applied Microwave Electronics Engineering & Research in Emerging Fields of Computer & Electronics Science & Engineering**”, on 05.07.2014, organized by Computer Science & Engineering Department, Tripura University (A Central University), Tripura, and SAMEER, IIT Bombay Campus, Powai, Mumbai, India.
- Participated a National Seminar on, “**E-resource and E-learning: Challenges and Opportunities for students**”, from 25.07.14 to 26.07.14, organized by Department of Information Technology, Bir Bikram Memorial College (BBMC), College Tilla, Agartala, and Sponsored by UGC.
- Workshop on “**Digital Holography**”, from 23.05.2013 to 24.05.2013, organized by Department of Computer Science & Engineering and Department of Information Technology, Tripura University (A Central University), Tripura, India.

- Completed a Course on **VB.NET**, from February 2010 to April 2010, at the **Brainware Computer Academy**, Y8 Block EP, Sector V, Salt Lake, Kolkata – 700091, with the performance of **Very Good** (70% or above and below 80%).
- Completed a Course on **Core Java**, from 25th June 2008 to 6th August 2008, at the **IBM Advanced Career Education**, 17 (15/1) Ghoshpara Road, 1st Floor, Barrackpore, 24 Pgs. (North), Kol – 700120, with the **Grade C**.

Laboratory Visits / Internships

- **National Institute of Electronics and Information Technology (NIELIT), Itanagar**, visit from 19.05.2014 to 30.05.2014, to create the Department of Electronics & Information Technology – Tripura University (DeitY - TU) Face Database, sponsored by DeitY, MCIT, New Delhi, India
- **North Eastern Hill University (NEHU), Shillong**, visit from 04.03.2014 to 20.03.2014, to create the Department of Electronics & Information Technology – Tripura University (DeitY - TU) Face Database, sponsored by DeitY, MCIT, New Delhi, India.
- **National Institute of Electronics and Information Technology (NIELIT), Imphal**, visit from 22.09.2012 to 06.10.2012, to create the Department of Electronics & Information Technology – Tripura University (DeitY - TU) Face Database, sponsored by DeitY, MCIT, New Delhi, India.
- **National Institute of Electronics and Information Technology (NIELIT), Kohima**, visit from 22.07.2012 to 6.08.2012, to create the Department of Electronics & Information Technology – Tripura University (DeitY - TU) Face Database, sponsored by DeitY, MCIT, New Delhi, India.
- **National Institute of Electronics and Information Technology (NIELIT), Guwahati**, visit from 28.02.2012 to 16.03.2012, to create the Department of Electronics & Information Technology – Tripura University (DeitY - TU) Face Database, sponsored by DeitY, MCIT, New Delhi, India.
- **National Institute of Electronics and Information Technology (NIELIT), Aizawl**, visit from 23.01.2012 to 4.02.2012, to create the Department of Electronics & Information Technology – Tripura University (DeitY - TU) Face Database, sponsored by DeitY, MCIT, New Delhi, India.
- A Practical Training on “**Computer Network and Communication**”, during the period from 29.06.2009 to 25.07.2009 under SDE (BD), SDE (Computer) Agartala, at Bharat Sanchar Nigam Limited Telecom, A Govt. of India Enterprise, Agartala, Tripura, India

Declaration:

I hereby declare that all the information furnished above is true to the best of my knowledge.

Place: Agartala

Date:

(Rajib Debnath)