

DR. SUDHANSU BALA DAS

NIT Rourkela ◊ Odisha, India

baladas.sudhansu@gmail.com, Contact: +(353)892606664

OVERVIEW:

- **Current Position:** POSTDOCTORAL RESEARCHER, University of Galway
- **Research Domain:** Natural Language Processing(NLP), Data Science, Educational Technology.
- **Publications:** Published work in reputable journals, including ACM Transactions(TALLIP), Cambridge Press, Elsevier, and Springer. Presented research at the 9th Workshop on Asian Translation (WAT).
- **Past Project Involvement:** Collaboration work with [Dr Bidyut Kumar Patra](#) (IIT BHU) and [Dr Asif Ekbal](#) (IIT Patna) on developing a baseline Multilingual Neural Machine Translation (MNMT) system for Indic to Indic Languages through the **ACM India Anveshan Setu Fellowship**.
- **Expertise:**
 - Developed multiple machine translation (MT) systems for low-resource Indian languages, leveraging advanced Multilingual Neural Machine Translation models with Transformer architecture, NMT, and SMT models.
 - Developed a dataset comprising 6 hours of Odia speech and utilized it to generate English speech captions in the Odia language.
 - Played a key role in a speech recognition system enabling system tracking and control through voice commands, enhancing user interaction.
 - Develop speech-to-text models to convert spoken words into written text, enabling efficient processing and analysis.
 - Developed web applications enabling access to video lectures and providing real-time updates for students, teachers, and parents.
- **Teaching Experience:** Over 4 years of teaching experience as a Teaching Assistant during my PhD, along with 5 months of experience as an Assistant Professor (Grade I) at [XIM University](#).
- **Research Experience:** 4 years of research experience in Defence Research Development Organisation(DRDO), Balasore, India

EDUCATION

- **Postdoctoral Researcher**, University of Galway, Ireland (Feb 2025—Present)
- **PhD.**, National Institute of Technology, Rourkela, Odisha, India (2020 Sep—Dec 2024)
Department: Computer Science and Engineering
Topic: Exploring Efficacy of Machine Translation System for Indian Languages
Supervisor: [Dr. Tapas Kumar Misra](#)
- **M. Tech.**, Veer Surendra Sai University of Technology, Odisha, India (2014—2016)
Department: Computer Science and Engineering
Topic: Computational Thinking based Learning
Supervisor: Dr. Rakesh Mohanty
- **B. Tech.**, Biju Patnaik University of Technology, Rourkela, Odisha (2010—2014)
Department: Computer Science and Engineering
Topic: Automatic Text Summarization for Hindi Language
Supervisor: Dr Dayal Kumar Behra

EXPERIENCE

Assistant Professor (Grade I): [XIM University](#), Bhubaneswar, India

July 2024 - November 2024

- Taught undergraduate courses, including Machine Learning (ML), Artificial Intelligence (AI), and Deep Learning (DL).
- Guided students on various NLP-related projects, providing mentorship on research methodologies and implementation.
- Organized workshops and seminars on emerging topics in NLP, AI, and machine learning to enhance students' understanding.
- Designed course materials, assignments, and evaluations to ensure comprehensive learning outcomes.

PhD Scholar: [NIT Rourkela](#), Odisha, India

September 2020-December 2024

- Built a baseline and investigated Multilingual Neural Machine Translation (MNMT) models for English to ILs and ILs to English languages. Explored the use of backtranslation for both English to ILs and ILs to English languages. Conducted research on domain adaptation strategies to improve translation accuracy.
- Developed a baseline MNMT system specifically designed for ILs to ILs. Investigated related grouping of languages for enhanced translation performance. Explored transliteration techniques for language adaptation.
- Explored Neural Machine Translation (NMT) and data augmentation techniques.
- Built baseline Statistical Machine Translation (SMT) models for Indian languages as well as proposed and compared two reordering methods. We explored tailored preprocessing techniques for language-specific improvements.
- Explore different tokenization methods and linguistic features for Indic Languages.

Project Scholar

September 2020-April 2023

Funded by: [Ministry of Electronics and Information Technology\(MeitY\)](#)

- **Project Title:** Design and Development of E-learning Platform for Assisting Underprivileged (SC/ST) school students in Rourkela Region, Odisha by converging Cable TV Network and Broadband Technology.
- Development of Machine Translation System for English to Odia Language.
- Integration of MT system to convert online English resources into generated captions in Odia languages. This system allows us to take resources (online videos that are in English) and generate their captions in Odia.

Senior Researcher

September 2018 - September 2020

Funded by: [Defence Research & Development Organisation\(DRDO\)](#)

Chandipur, Odisha

- **Project Title:** *Interactive Voice Command Engine for Human Machine Interface (HMI) using Natural Language Processing*
- Developed NLP-based speech command tools for embedded system implementation of **SMART EOTS** using Python and C#.
- Implementation of Upgraded Architecture for Data Redundancy with Network Management Software
- Offline Range estimation from Single Electro-Optical Tracking System (EOTS): Implementation of Deep Learning with Image Processing of Infrared imagery (using MATLAB)

Junior Researcher

September 2016 - September 2018

Funded by: DRDO

DRDO, Chandipur

- **Project Title:** *Upgradation of CAN Software Packages*
- Developed Web-Based Application for Upgradation of Campus Area Network(CAN) Software Packages using .NET and Oracle.
- Administration of Database Server and Network Management Server

Teaching Assistant: NIT Rourkela (July 2021—July 2024)

- Courses for B. Tech. students: C Programming, Natural Language Processing(NLP), Software Engineering, Software Testing.
- Role: Taking Labs, Coordinating doubt-clearing classes and class tests, maintaining student attendance records and grades, and demonstrating examples.
- Semester-wise student enrollment: 100+

SKILLS

Tools and Languages	Python, C#, Matlab, LATEX
Technical Skills	Machine Translation, Natural Language Processing, Software Engineering
Soft Skills	Problem Solving, Critical Thinking, Adaptability, Teamwork, Research Proposal Writing

PUBLICATIONS

Investigating the Effect of Backtranslation for Indic Languages (2025) *Proceedings of the First Workshop on Natural Language Processing for Indo-Aryan and Dravidian Languages (IndoNLP2025)* (**CORE A***)

Multilingual Neural Machine Translation System for Indic to Indic Languages. *ACM Transactions on Asian and Low-Resource Language Information Processing*, TALLIP, 2024 (**SCI**).

NIT Rourkela Machine Translation (MT) System Submission to WAT 2022 for MultiIndicMT: An Indic Language Multilingual Shared Task (2022) *Proceedings of the 9th Workshop on Asian Translation*, International Conference on Computational Linguistics, Gyeongju, Republic of Korea (**CORE A***)

Improving Multilingual Neural Machine Translation System for Indic Languages. *ACM Transactions on Asian and Low-Resource Language Information Processing*, TALLIP, 2023 (**SCI**).

Statistical machine translation for Indic Languages. *Natural Language Engineering*, Cambridge University Press, 2023, (**SCI**)

A threshold technique for Mistranslation Removal from Indic Languages. *Multimedia Tools and Applications*, Springer, 2024, (Under Review), (**SCI**)

A comparative analysis of Tokenization for Indic Languages. *ACM Transactions on Intelligent Systems and Technology*, 2024, (Under Review), (**SCI**)

Alarm Coloring and Grouping algorithm for root cause analysis, *Journal of King Saud University- Computer and information Sciences*, Elsevier Journal, 2018, (**SCI**)

An efficient average execution time-round-robin (AET-RR) scheduling algorithm (2019), *International Journal of Information Technology(IJIT)*, Springer Journal (**Scopus**)

A Proposed What Why How(WWH) Learning Model for Students and Strengthening Learning Skills through Computational Thinking (2016), *Book Chapter: Progress in Intelligent Computing Techniques: Theory, Practice, and Applications*, Springer

A new modified version of Standard RSA Cryptography algorithm (2018), *Book Chapter: Smart Computing Paradigms: New Progresses and Challenges*, Springer Nature Singapore

Study of Atmospheric Attenuation of IR Signature of airborne vehicle (2019), *IEEE Conference, International Conference on Range Technology (ICORT)*, DRDO

Sentiment Analysis for Prediction of Bitcoin Response, *Book Chapter: The Role of IoT and Blockchain: Techniques and Applications*

Intelligent Optical Tracking (2019), *International Conference on Intelligent Computing and Remote Sensing (ICI-CRS)*, IEEE

A Graphical User Interface (GUI) Based Speech Recognition System Using Deep Learning Models (2022), *Book Chapter: Advances in Distributed Computing and Machine Learning*, Springer

ACHEIVEMENTS

- Best Localization Blog Paper, Issued by SAMVAD, 2024
- AI Excellence Award, Issued by SAMVAD, 2023
- ACM India Anveshan Setu Fellow, 2023
- Best Paper Award in ICACNI organized in NIT Warangal, 2022
- One Australian patent, 2021 (APPARATUS FOR REAL TIME PRISONER MONITORING & ALERTING SYSTEM USING IOT)
- University Gold Medalist in M.Tech, 2016
- First Position in Roboagonopsepa organized by Trident Academy of Technology, Bhubaneswar
- Second Prize in Seminar about Robotics using Artificial Intelligence Technique
- First Position in Robotics organized by Robosapiens, IIT, Kharagpur

LEADERSHIP

- Guided and mentored more than 100 students during their internship in various domains at DRDO as well as at NIT Rourkela
- Represented the Electro-Optical Tracking System (EOTS) of ITR in front of G. Satheesh Reddy, adviser, DRDO, at the DRDO young scientist meet, in 2019.
- Teaching Assistant in different labs

PROFESSIONAL ACTIVITIES

- **Reviewer for Conferences:**
 - Reviewer in ICORT 2025 to be held in DRDO
 - Reviewer in ICONIP 2024 to be held in New Zealand
 - Reviewer in AfricaNLP 2024 to be held in Kigali, Rwanda, Africa
 - Reviewer in IEEE 11th Region 10 Humanitarian Technology Conference (R10-HTC) 2023 held in Marwadi University
 - Reviewer in CoCoLe 2023 held in NIT Warangal
 - Reviewer in ICORT 2023 held at Integrated Test Range (ITR), DRDO, India
 - Reviewer in ICONIP 2022 held at IIT Indore, India
 - Reviewer in COCOLE 2022 held at the National Institute of Technology, Warangal, Telangana, India
 - Reviewer in ICADCML 2022 held at National Institute of Technology, Warangal, Telangana, India
 - Reviewer in ICCSEA 2022 at GIET University
- **Reviewer for Journals:**
 - Reviewer in IEEE Transactions on Artificial Intelligence
 - Reviewer in IEEE Transactions on Vehicular Technology
 - Reviewer in Journal of Supercomputing
 - Reviewer in Journal of Neurocomputing
 - Reviewer in IEEE Access
 - Reviewer in PLOS One

- Reviewer in Transactions on Audio, Speech and Language Processing
- Reviewer in Complex & Intelligent Systems

CODES/CONTACT DETAILS

- **LinkedIn:** <https://www.linkedin.com/in/sudhansu-bala-das-29832160/>
- **Google Scholar:** https://scholar.google.co.in/citations?hl=en&user=ka2dreAAAAAJ&view_op=list_works&sortby=pubdate
- **ResearchGate:** <https://www.researchgate.net/profile/Sudhansu-Das/research>

Date: June 18, 2025

Place: Ireland

Sudhansu Bala Das