SUDHANSU BALA DAS

Rourkela ⋄ Odisha, India

baladas.sudhansu@gmail.com ⋄ https://www.linkedin.com/in/sudhansu-bala-das-29832160/ ⋄

OVERVIEW:

- **Current Position:** PhD Scholar, Department of Computer Science and Engineering, NIT Rourkela

- **Research Domain:** Natural Language Processing(NLP), Machine Translation(MT), Computational Thinking.

- **Publications:** Published work in reputed journals including ACM Transactions, Elsevier, and Springer. Present research work in the venue of the 9th Workshop on Asian Translation (WAT).

- **Project Involvement:** Collaboration work with **Dr Bidyut Kumar Patra** (IIT BHU) and **Dr Asif Ekbal** (IIT Patna).

- **Expertise:**

  - Spearheaded the development of machine translation (MT) systems for low-resource Indian languages, leveraging advanced SMT, NMT, and MNMT with Transformer models.

  - Played a key role in a speech recognition system enabling system tracking and control through voice commands, enhancing user interaction.

  - Developed web applications enabling access to video lectures and providing real-time updates for students, teachers, and parents.

- **Teaching Experience:** 4 years of teaching experience as a Teaching Assistant during my PhD

- **Research Experience:** 4 years of research experience in DRDO, Balasore, India

EDUCATION

- **PhD.,** National Institute of Technology, Rourkela, Odisha, India (2020 Sep—till date)
  Department: Computer Science and Engineering
  Topic: Investigating the Effect of Machine Translation System for Low Resource Indian Languages
  Supervisors: Dr. Tapas Kumar Misra and Dr. Bidyut Kumar Patra(IIT BHU)

- **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

Project Scholar   September 2020-April 2023
Ministry of Electronics and Information Technology(MeitY)

- 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
[Defence Research & Development Organisation(DRDO)](#)   *Chandipur, Odisha*

- 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
DRDO   *DRDO, Chandipur*

- 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—till date)

- Courses for B. Tech. students: NLP, Software Engineering, Machine Learning, Programming, and Data Structure.
- Role: Taking Labs, Coordinating doubt-clearing classes and class tests, maintaining student attendance records and grades, and demonstrating examples.
- Semester-wise student enrollment: 80+

SKILLS

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

PUBLICATIONS

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*, 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, 1-23. **(SCI)**.

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

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

An approach for mistranslation removal from popular dataset for Indic MT Task, Language Resources and Evaluation, 2023, **(SCI)** (Under Review)

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*

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

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

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

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

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 (ICICRS)*, 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

- 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 more than 100 students during their internship in various domains at DRDO
- Represented the Electro-Optical Tracking System of ITR in front of G. Satheesh Reddy, adviser, DRDO, at the DRDO young scientist meet.
- Teaching Assistant in different Labs

PROFESSIONAL ACTIVITIES

- **Reviewer for Conferences** :
  - Reviewer in AfricaNLP
  - Reviewer in IEEE 11th Region 10 Humanitarian Technology Conference (R10-HTC) 2023 to be held in Marwadi University
  - Reviewer in CoCoLe 2023 going to be 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:**
  - Journal of Supercomputing

- IEEE Transaction of Artificial Intelligence

- 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

REFEREE DETAILS

1. **Dr Bidyut Kumar Patra**
   Computer Science and Engineering Department, Indian Institute of Technology (Banaras Hindu University) Varanasi (IIT-BHU)
   Mob no: (+91) 9438503632, Email: bidyut.cse@itbhu.ac.in

2. **Dr Tapas Kumar Mishra**
   Computer Science and Engineering Department, National Institute of Technology (NIT) Rourkela, Odisha, India
   Mob no: (+91) 70081 21038, Email: mishrat@nitrkl.ac.in

3. **Dr Pradipta Roy**
   Defence Research and Development Organisation (DRDO), Integrated Test Range (ITR), Chandipur, Balasore, India Mob no: (+91) 94387 28835, Email: pradipta.roy.itr@gov.in

Date: February 17, 2024
Place: Rourkela

Sudhansu Bala Das