

Nihar Ranjan Sahoo

PHD RESEARCH SCHOLAR, CFILT IITB

Indian Institute of Technology, Bombay, India

✉ niharsahooiguit@gmail.com | 🏠 sahoonihar.github.io/ | 📧 sahoonihar | 📺 nihar-nrs26 | 🐦 @nihar_runny

Google Scholar: [Link](#)

Work Experience

Huzzle Labs

[Bhubaneswar, India \(Remote\)](#)

ML- RESEARCHER

Mar 2026 - Present

- Building GUI-agents for OS and web based applications. It involves improving grounding of VLMs for OS-related images understanding, grounding tasks, actions, and planning for complex task execution involving multiple applications.
- Building large scale datasets for performing OS related tasks with less agentic interactions.
- Building small VLMs under $5B$ paramter range with $100x$ less data compared to frontier VLMs using a) distillation, b) signal rich data preparation, and c) parameter efficient training.
- Building SLMs within $1B - 3B$ paramter range with $100 - 1000x$ less data compared to frontier LLMs using a) distillation, b) signal rich data preparation, and c) parameter efficient training.

BharatGen

[Mumbai, India](#)

APPLIED ML- RESEARCHER

June 2025 - Mar 2026

- Contributing to the development of a large language model (LLM) from scratch tailored for Indian contexts, with multilingual capabilities across major Indian languages.
- Leading and coordinating post-training pipelines including Supervised Fine-Tuning (SFT), Reward Modeling, Preference Optimization (DPO/GRPO), and Model Distillation.
- Designing multilingual instruction-following and safety-aligned datasets, incorporating cultural sensitivities and domain-specific use cases relevant to Indian governance, legal, education, and finance.
- Also, leading the efforts for multi-stage pre-training data collection and creation for India-centric LLM building.

[Mumbai, India](#)

RESEARCH CONSULTANT

April 2025 - June 2025

- Leading and coordinating post-training pipelines including Supervised Fine-Tuning (SFT), Reward Modeling, Preference Optimization (DPO/GRPO) for BharatGen's Param model family.
- Designing instruction-following and safety-aligned datasets, incorporating cultural sensitivities and domain-specific use cases relevant to Indian governance, legal, education, and finance.

Citrix R&D India Pvt. Ltd

[Bangalore, India](#)

SOFTWARE ENGINEER 2

Jul. 2019 - Feb. 2020

- Worked on the front-end development of Citrix Workspace for Mac Systems.
- Worked on shifting the codebase of Citrix Workspace from Objective-C to Swift.

Education

Ph.D, Computer Science and Engineering

[Mumbai, India](#)

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Jan. 2021 - July. 2026

- **CGPA: 9.12/10**
- **Advisor:** Prof. Pushpak Bhattacharyya
- **Thesis:** *Decoding Social Bias in NLP: Multilingual Datasets, Benchmarks and Mitigation for Fairness and Safety in NLP*
- **Selected Coursework:** Natural Language Processing, Deep Learning for NLP, Automatic Speech Recognition, Organization of Web Information

Master in Technology, Computer Science and Automation

[Bengaluru, India](#)

INDIAN INSTITUTE OF SCIENCE (BENGALURU)

Aug. 2017 - June. 2019

- **Advisor:** Prof. Sridharan Devarajan
- **Thesis:** *Alzheimers Disease: Understanding mechanisms for early diagnosis and treatment*
- **Selected Coursework:** Pattern Recognition and Neural Networks, Machine Learning for Signal Processing, Natural Language Processing, Probability and Statistics, Linear Algebra, Design and Analysis of Algorithms

Bachelor in Technology, Computer Science and Engineering

[Sarang, Odisha](#)

INDIRA GANDHI INSTITUTE OF TECHNOLOGY

July. 2012 - June. 2016

Internship

Adobe Research India

Bangalore, India

RESEARCH INTERN

May. 2023 - July. 2023

- Worked on debiasing the Text-to-Image diffusion models.
- We adjust the input prompt and cross-attention in text-to-diffusion to produce images with increased and equitable diversity in gender and skin tone categories.
- Our approach is specifically designed for the inference stage of the generation pipeline, eliminating the need for additional training.

Video Analytics Lab

Bangalore, India

RESEARCH ASSISTANT, CDS, IISc

Feb. 2020 - Dec. 2020

- Image enhancement in RAW domain.
- We have paired (low exposure and high exposure) abundant data in source domain (eg : Sony) and few (1-5) paired data in target domain (eg : Nikon).
- Using CNN we need to learn the way to enhance low exposure image to get high exposure image. As it is hard to collect paired abundant data for every camera, we are using few shot domain adaptation technique to achieve our goal.

Publications

MILA (MULTILINGUAL INDIC LANGUAGE ARCHIVE): A DATASET FOR EQUITABLE MULTILINGUAL LLMS

[Long Paper](#)

BHARATGEN TEAM

PARAM-1 BharatGen 2.9B Model

[Model Technical Report](#)

BHARATGEN TEAM

Beyond Single-Axis Fairness: Learning to Detect and Rewrite Intersectional Biases

[Long Paper](#)

NIHAR RANJAN SAHOO, VIJENDRA KUMAR VAISHYA, PUSHPAK BHATTACHARYYA

[Under Submission](#)

Open-DeBias: Toward Mitigating Open-Set Bias in Language Models

[Long Paper](#)

ARTI RANI, NIHAR RANJAN SAHOO, SHWETA SINGH, GAURAV KUMAR NAYAK

[EMNLP Findings, 2025](#)

Mathematics Isn't Culture-Free: Probing Cultural Gaps via Entity and Scenario Perturbations

[Arxiv Paper](#)

ADITYA TOMAR, NIHAR RANJAN SAHOO, ASHISH MITTAL, RUDRA MURTHY, PUSHPAK BHATTACHARYYA

Momentum Meets Virality: A Novel Metric for Unmasking Social Bias in Viral Tweets

[Long Paper](#)

NIHAR RANJAN SAHOO, ARIF AHMAD, NISHITA MADAAN, PUSHPAK BHATTACHARYYA

[Under Submission](#)

From 'No' in English to 'Yes' in Hindi: Revealing LLM Security Gaps using Indian Languages

[Long Paper](#)

NIHAR RANJAN SAHOO, AAKASH KUMAR AGRAWAL, SRAVANI GUNNU, GARIMA JAIN, SAKSHI PANDEY, AMIT PANDEY, PUSHPAK BHATTACHARYYA

[Under Submission](#)

BharatBBQ: A Multilingual Bias Benchmark for Question Answering in the Indian Context

[Long Journal Paper](#)

NIHAR RANJAN SAHOO*, ADITYA TOMAR*, PUSHPAK BHATTACHARYYA

[TACL 2025](#)

"You are Beautiful, Body Image Stereotypes are Ugly!" BiStereo: A Benchmark to Measure Body Image Stereotypes in Language Models

[Long Paper](#)

NARJIS ASAD, NIHAR RANJAN SAHOO, RUDRA MURTHY, SWAPRAVA NATH, PUSHPAK BHATTACHARYYA

[ACL Findings, 2025](#)

Evaluating Dialect Robustness of Language Models via Conversation Understanding

[Long Paper](#)

DIPANKAR SRIRAG, NIHAR RANJAN SAHOO, ADITYA JOSHI

[SUMEval, COLING, 2025](#)

IndiBias: A Benchmark Dataset to Measure Social Biases in Language Models for Indian Context

NIHAR RANJAN SAHOO, PRANAMYA PRASHANT KULKARNI, NARJIS ASAD, ARIF AHMAD, TANU GOYAL, APARNA GARIMELLA, PUSHPAK BHATTACHARYYA

[Long Paper](#)

NAACL, 2024

IndicCONAN: A multilingual dataset for combating Hate Speech in Indian Context

NIHAR RANJAN SAHOO, GYANA PRAKASH BERIA, PUSHPAK BHATTACHARYYA

[Long Paper](#)

AAAI, 2024

With Prejudice to None: A Few-Shot, Multilingual Transfer Learning Approach to Detect Social Bias in Low Resource Languages

NIHAR RANJAN SAHOO, NITEESH MALLELA, PUSHPAK BHATTACHARYYA

[Long Paper](#)

ACL, 2023

Detecting Unintended Social Bias in Toxic Language Datasets

NIHAR RANJAN SAHOO, HIMANSHU GUPTA, PUSHPAK BHATTACHARYYA

[Long Paper](#)

CoNLL, 2022

Hollywood Identity Bias Dataset: A Context Oriented Bias Analysis of Movie Dialogues

SANDHYA SINGH*, PRAPTI ROY*, NIHAR RANJAN SAHOO*, NITEESH MALLELA*, HIMANSHU GUPTA*, PUSHPAK BHATTACHARYYA

[Long Paper](#)

REC, 2022

Few-Shot Domain Adaptation for Low Light RAW Image Enhancement

K RAM PRABHAKAR, VISHAL VINOD*, NIHAR RANJAN SAHOO*, AND R VENKATESH BABU

[Best Student Paper \(Runner up\)](#)

[Award \[BMVC Site\]](#)

BMVC, 2021 (Oral)

Tutorials

Addressing Bias and Hallucination in Large Language Models

NIHAR RANJAN SAHOO, ASHITA SAXENA, KISHAN MAHARAJ, ARIF AHMAD, ABHIJIT MISHRA AND PUSHPAK BHATTACHARYYA

[Half-day Tutorial](#)

REC-COLING, 2024

Vision-Language Models: Evolution, Applications, and Challenges in Bridging the Gap Between Visual and Textual Data

NIHAR RANJAN SAHOO, ABISEK R K, PUSHPAK BHATTACHARYYA

[Half-day Tutorial](#)

ICON, 2023

Harnessing LLMs with Prompts: Applications, Challenges, and Maximizing Their Potential

TEJOMAY KISHOR PADOLE, MEET DOSHI, KISHAN MAHARAJ, ASHITA SAXENA, ARIF AHMAD, NIHAR RANJAN SAHOO, PUSHPAK BHATTACHARYYA

[Half-day tutorial](#)

ICON, 2023

Social Bias Detection and Mitigation in Text

NIHAR RANJAN SAHOO, SHANDHYA SINGH, PRAPTI ROY, NITEESH MALLELA, HIMANSHU GUPTA, PUSHPAK BHATTACHARYYA

[Half-day tutorial](#)

ICON, 2022

M.Tech Thesis

Alzheimer's Disease: Understanding Mechanisms for Early diagnosis and treatment using functional MRI of brain

[Advisor: Sridharan Devarajan](#)

INDIAN INSTITUTE OF SCIENCE, BENGALURU

Jul. 2019

- Longitudinal study on the Indian population to determine the early bio-markers of Alzheimer's disease using multimodal approaches.
- Psychophysical assessments has been done for behavioral task using 2-ADC model.
- The aim is to predict the psychophysical parameters (human behaviour) using neuroimaging (rest fMRI, task fMRI, DTI) data of the population.

Teaching Assistantship

Indian Institute of Technology Bombay

[Mumbai, India](#)

TEACHING ASSISTANT, ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Jan. 2025 - Apr. 2025

- *Received Excellence in TA award.*

Indian Institute of Technology Bombay TEACHING ASSISTANT, ADVANCED DIGITAL IMAGE PROCESSING	Mumbai, India Jan. 2024 - Apr. 2024
Indian Institute of Technology Bombay COURSE INSTRUCTOR, TEACHING ASSISTANTSHIP 101 (TA101)	Mumbai, India Aug. 2023 - Dec. 2023, Jan 2024-May 2024
Indian Institute of Technology Bombay TEACHING ASSISTANT, DIGITAL IMAGE PROCESSING	Mumbai, India Aug. 2023 - Dec. 2023
NPTEL TEACHING ASSISTANT, DEEP LEARNING	Online Aug. 2022 - Dec. 2022, Jan. 2023 - Apr. 2023
Indian Institute of Technology Bombay TEACHING ASSISTANT, NATURAL LANGUAGE PROCESSING	Mumbai, India Aug. 2022 - Dec. 2022, Aug. 2024 - Dec. 2024
Indian Institute of Technology Bombay TEACHING ASSISTANT, DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	Mumbai, India Jan. 2022 - May. 2022, Jan. 2023 - May. 2023
Indian Institute of Technology Bombay TEACHING ASSISTANT, ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING • <i>Received Excellence in TA award.</i>	Mumbai, India Aug. 2021 - Dec. 2021

Roles & Achievements

ACHIEVEMENTS

- 2025 **George B. Fernandes Award for Excellence in PhD Research for Year 2024-25**, IIT Bombay
- 2024 **Vijay Vashee Award for Excellence in PhD Research for Year 2023-24**, IIT Bombay
- 2024 **Microsoft Research Travel Grant**, NAACL Conference 2024
- 2023 **Bronze Medal**, 11th Inter IIT Tech Meet
- 2022 **PhD Fellowship**, Received Prime Minister's Research Fellowship
- 2022 **Silver Medal**, 10th Inter IIT Tech Meet
- 2018 **Winner**, Intel Campus Day, IISc Bengaluru
- 2017 **All India Rank - 9**, Graduate Aptitude Test in Engineering(GATE), Computer Science
- 2017 **Winner**, Codechef Certification Examination(CCDSAP)
- 2015 **First**, Hour of Code, Horizon, IGIT
- 2007 **Rank 40**, Mathematics Olympiad by Shikhya Vikash Samiti, Odisha

ROLES

- 2026 **Program Committee Member (ARR)**, Reviewer for Research papers for each cycle in ARR
- 2025 **Program Committee Member AAAI**, Reviewer for Research papers AAAI-2025
- 2025 **Program Committee Member (ARR)**, Reviewer for Research papers for each cycle in ARR
- 2024 **Program Committee Member (ARR)**, Reviewer for Research papers for each cycle in ARR
- 2023 **UNESCO Panelist**, Generation AI: Shaping Education for Flourishing [RIE Mysuru, India](#)
- 2018-19 **Placement coordinator**, Indian Institute of Science, Bengaluru [Bengaluru](#)
- 2019 **Event Coordinator**, Data Science Hackathon, IISc Open Day'19 [Bengaluru](#)
- 2018 **Event Coordinator**, Hackathon, CSA Undergraduate Summer School'18 [Bengaluru](#)