

Ishaan Watts

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EDUCATION

Indian Institute of Technology (IIT), Delhi, India – Bachelor of Technology July 2019 - May 2023
Major: Engineering Physics; **Minor:** Computer Science; **Department Rank:** 4/49 **CGPA:** 8.996/10
Featured Coursework: Data Structures and Algorithms, Digital Electronics, Machine Learning, Special Topics in Computer Applications (Social Computing), Computer Networks, Analysis and Design of Algorithms, Linear Algebra and Differential Equations, Calculus, Probability and Stochastic Processes, Signals and Systems

EXPERIENCE

Google DeepMind July 2024 - Present
Pre Doctoral Researcher with [Partha Talukdar](#) Bengaluru, India







Microsoft Research India May 2023 - June 2024
Research Intern with [Sunayana Sitaram](#) Bengaluru, India

Torch Investment Management Sept 2022 - Dec 2022
Machine Learning Engineer Intern with [Amit Sharma](#) Remote / Noida, India

Udaan May 2022 - July 2022
Data Scientist Intern with [Pranjal Singh](#) Remote / Bengaluru, India

Griffith University May 2021 - July 2021
Research Intern with [Saiful Islam](#) Remote / Queensland, Australia

PUBLICATIONS

- [1] **PARIKSHA: A Large-Scale Investigation of Human-LLM Evaluator Agreement on Multilingual and Multi-Cultural Data** 
[Ishaan Watts](#), Varun Gumma, Aditya Yadavalli, Vivek Seshadri, Swami Manohar, Sunayana Sitaram
- [2] **RTP-LX: Can LLMs Evaluate Toxicity in Multilingual Scenarios?**  
Adrian de Wynter, [Ishaan Watts](#), Nektar Ege Altintoprak, Tua Wongsangaroonsri, Minghui Zhang, Noura Farra, Lena Baur, Samantha Claudet, Pavel Gajdusek, Can Gören, Qilong Gu, Anna Kaminska, Tomasz Kaminski, Ruby Kuo, Akiko Kyuba, Jongho Lee, Kartik Mathur, Petter Merok, Ivana Milovanović, Nani Paananen, Vesa-Matti Paananen, Anna Pavlenko, Bruno Pereira Vidal, Luciano Strika, Yueh Tsao, Davide Turcato, Oleksandr Vakhno, Judit Velcsov, Anna Vickers, Stéphanie Visser, Herdyan Widarmanto, Andrey Zaikin, Si-Qing Chen
- [3] **MAPLE: Multilingual Evaluation of Parameter Efficient Finetuning of LLMs** 
Divyanshu Aggarwal*, Ashutosh Sathe*, [Ishaan Watts](#), and Sunayana Sitaram
The 62nd Annual Meeting of the Association for Computational Linguistics [ACL Findings 2024]
- [4] **MEGAVERSE: Benchmarking LLMs across languages, modalities, models and tasks**  
Sanchit Ahuja, Divyanshu Aggarwal, Varun Gumma, [Ishaan Watts](#), Ashutosh Sathe, Millicent Ochieng, Rishav Hada, Prachi Jain, Maxamed Axmed, Kalika Bali, and Sunayana Sitaram
North American Chapter of the Association for Computational Linguistics [NAACL 2024]

MAJOR AWARDS & ACHIEVEMENTS

- Bagged **1st position** in Topic Challenge & Honours in Executive Challenge at Microsoft Global Hackathon. 2023
- Secured **6th position amongst 5000** teams all over India in the Amazon ML Challenge 2023. 2023
- Granted **Merit Award** in 3 semesters for ranking top 3 of 49 students in Physics Dept., IIT Delhi. 2021-2022
- Achieved **Rank 1635 in JEE-Advanced & 99.94 percentile in JEE-MAINS** among 1.4 million candidates. 2019
- Recipient of **KVPY Fellowship** (Kishore Vaigyanik Protsahan Yojana) given by DST, Government of India. 2018

FEATURED ACADEMIC PROJECTS & COLLABORATIONS

Indic LLM Evaluation Leaderboard

Advisors: [Sunayana Sitaram](#), [Vivek Seshadri](#), [Swami Manohar](#)

Jan 2024 - June 2024

Microsoft Research India

- Collaborated with [People+AI](#) and [Karya Inc.](#) to build a fair and transparent evaluation platform for LLMs. 🏆
- Curated **culturally-nuanced** prompt through native-speakers in **10 Indian languages** and evaluated 30+ LLMs.
- Built leaderboards from **90k human & 30k LLM-based** evaluations via pairwise comparisons & direct assessment.
- Studied Human-LLM agreement & biases in evaluations across languages & different evaluation types. [Preprint]

Multicultural and Multilingual Toxicity Dataset Curation

Advisor: [Adrian de Wynter](#)

Dec 2023 - April 2024

Microsoft Redmond

- Released a culturally-nuanced toxic multilingual dataset in **28 languages** to facilitate safer deployment of LLMs.
- Evaluated **10 S/LLMs** for toxicity detection across **8 harm categories** and different language groups. [Preprint]
- Observed LLMs fail to detect subtle biases (microaggressions) & performance decreases with language's availability.

Multilingual Finetuning and Benchmarking

Advisors: [Sunayana Sitaram](#), [Kailka Bali](#)

Oct 2023 - Feb 2024

Microsoft Research India

- Studied **QLoRA** finetuning technique across different rank-quantisation configurations, base models & datasets.
- Finetuned **90+ models** and analysed cross-lingual transfer, catastrophic forgetting and effects of **PEFT**. [ACL'24]
- Benchmarked multilingual capabilities & contamination of 20 LLM across 23 dataset & 83 languages. [NAACL'24]

Shiksha Copilot Web App

Advisors: [Akshay Nambi](#), [Tanuja Ganu](#)

June 2023 - Nov 2023

Microsoft Research India

- Engineered **Shiksha Copilot** web app to aid teachers in creating engaging content for students using Gen-AI. 📄
- Built an intricate and user-friendly frontend via streamlit, structured telemetry and analysed collected data.
- Collaborated with [Shikshana Foundation](#) and deployed Copilot in **10+ schools** across Karnataka to teachers.

Holistic User-Embeddings via GNNs

Mentors: [Pranjal Singh](#), [Mohit Kumar](#)

May 2022 - July 2022

Udaan

- Developed framework to generate user representation from buyer-seller interaction graph for better segmentation.
- Built multi-relational & multi-entity graph and modeled **Hetero-Graph AutoEncoder** with novel a loss function.
- Improved Udaan **fraud detection** by **2.45%** by incorporating generated embeddings in existing fraud model.

Malware Detection using Machine Learning

Advisor: [Saiful Islam](#)

May 2021 - July 2021

Griffith University

- Performed **malware detection & program analysis** of binaries sourced from VirusShare using machine learning.
- Constructed Control Flow Graphs from binaries through **static analysis** and used opcodes as features for nodes.
- Applied tf-idf vectorisation on dataset & designed **Graph Convolutional Network** to achieve **89.1%** accuracy.

VOLUNTEERING & CO-CURRICULAR ACTIVITIES

Volunteering

- Organised & participated in India's **First Model Builder Summit** at Bangalore Convention Centre with People+AI.
- **Reviewer** for AI-ML Systems 2023, an Indian conference on Systems Engineering and Artificial Intelligence.
- Mentored six freshmen for their academic wellbeing through **BSW Student Mentorship Program** at IIT Delhi.
- Prepared Care-Packages comprising poems & articles under **NSS Mental Health Project** during the pandemic.

Co-Curricular Activities

- Attended **Winter School on Deep Learning** organised by Indian Statistical Institute (ISI), Kolkata in Spring 2023.
- Completed **A1 level in Spanish** as non-credited course of Humanities & Social Sciences Department, IIT Delhi.