Ishaan Watts

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EDUCATION

Carnegie Mellon University (CMU)   Pittsburgh, PA
Master of Science in Machine Learning;   *December 2026*
Coursework: *Advance Intro to Machine Learning*, Probability & Statistics**

Indian Institute of Technology Delhi (IIT-D)   New Delhi, India
Bachelor of Technology in Engineering Physics;   **Minor:** *Computer Science;* **CGPA:** *9/10*   *May 2023*
Coursework: *Algorithms, Calculus, Digital Electronics, Computer Networks, Linear Algebra, Signals & Systems, Economics*

PUBLICATIONS   C=CONFERENCE, P=PREPRINT

[P.1] **Gemini 2.5: Pushing the Frontier with Advanced Reasoning, Multimodality, Long Context, and Next Generation Agentic Capabilities** *Gemini Team, Google DeepMind (including* Ishaan Watts*)* **[Tech Report]**   [Paper]

[C.4] **RTP-LX: Can LLM Evaluate Toxicity in Multilingual Scenario?** *Adrian de Wynter,* Ishaan Watts*, et al.* **[AAAI '25]** [Paper]

[C.3] **PARIKSHA: A Large-Scale Investigation of Human-LLM Evaluator Agreement on Multilingual & Multi-Cultural Data** Ishaan Watts*, Varun Gumma, Aditya Yadavalli, Vivek Seshadri, Swami Manohar, Sunayana Sitaram* **[EMNLP '24]**   [Paper]

[C.2] **MAPLE: Multilingual Evaluation of Parameter Efficient Finetuning of LLMs** *Divyanshu Aggarwal, Ashutosh Sathe,* Ishaan Watts*, and Sunayana Sitaram* **[ACL Findings '24]**   [Paper]

[C.1] **MEGAVERSE: Benchmarking LLMs across languages, modalities, models and tasks** *Sanchit Ahuja, Divyanshu Aggarwal, Varun Gumma,* Ishaan Watts*, …. Kalika Bali, and Sunayana Sitaram* **[NAACL '24]**   [Paper]

EXPERIENCE

Google DeepMind | *Pre-Doctoral Researcher*   *July 2024 - July 2025*
Projects: *Gemini 2.5-Pro Contributor* [P.1]*, Multi-Model Composition, Model Stitching vs. Adapters for Continual Learning*

- Explored composition of generalist & specialist LLMs for **continual domain adaptation** & **compositional tasks** *(code × i18n)*
- Improved *CALM* architecture & **beat LoRA** under varied budget constraints; presented poster at **Google Research Week '25**
- Designed a **routing-based composition** of 64 models for inference-time expert selection, beating a 2x larger monolithic model
- Engineered robust **JAX-based** training, evaluation, and bulk inference pipelines for composed models within **Gemini codebase**

Microsoft Research | *NLP Research Intern*   *May 2023 - June 2024*
Projects: *Toxicity Detection Dataset* [C.4]*, Indic LLM Evaluation Leaderboard* [C.3]*, Multilingual Finetuning* [C.2] *and Benchmarking of LLMs* [C.1]*, Education Bot* [Media Coverage]

- Built culturally-nuanced **evaluation framework** in 10 Indic languages, assessing 30+ LLMs via **120k+** human/LLM judgments
- Released **38-language toxicity benchmark**, evaluating 10 S/LLMs on 8 harm type, exposing failures in detecting subtle biases
- Studied **QLoRA finetuning** on 90+ models, analyzing cross-lingual transfer and benchmarked 20 LLMs across **83 languages**
- Developed & deployed **Shiksha Copilot**, GenAI tool helping teachers create educational content, in **100+ schools** in India

Torch Investment Management | *Machine Learning Engineer Intern*   *September 2022 - December 2022*
Project: *Stock Price Modeling via Deep Learning*

- Optimized **LightGBM** model to predict Top-30 US S&P 500 stocks with 60% accuracy & led data modeling for Saudi market
- Innovated new-feature linking stock price with tweet sentiment by **topic filtering** (BART) & **sentiment analysis** (FinBERT)

Udaan | *Data Scientist Intern*   *May 2022 - July 2022*
Project: *Holistic User-Embeddings via Graph Neural Networks*

- Generated user-representation from buyer-seller interaction graph via multi-relational, multi-entity **hetero-graph autoencoder**
- Integrated embeddings into **fraud detection** pipelines, reduced Udaan dispute loss by **2.45%** and offered full-time position

SKILLS

Languages: Python, Java, SQL, R, Bash, C++, Matlab, LaTeX **Technologies**: Git, Docker, RAG, CUDA, HPC, Vector DB, Spark
Libraries: PyTorch, TensorFlow, JAX, Numpy, Pandas, Matplotlib, Scikit-Learn, Snscrape, Streamlit, Langchain, OpenCV

HONORS & AWARDS

Narotam Sekhsaria ($40,000), **KC Mahindra ($6,000)** and **JN Tata Fellowship ($12,000)** to pursue graduate studies at CMU
Peer Bonuses at Google DeepMind | **1st place** in Microsoft Global Hackathon '24 | **6th place** in Amazon ML Challenge '23
3x IIT-D Semester Merit Awards for being top 3 in department | **KVPY Fellowship** by Government of India, ranking top 2%