# Diganta Misra

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## Summary

My research interests are in the domain of advancing our understanding of optimal design and limitations of foundation models. This encapsulates my current work on profiling model capabilities through the lens of argumentation frameworks and improving post training preference modelling approaches.

**Languages:** English (fluent), Hindi, Odia, Thai (Basics), German (A2) and Japanese (Basics).

**Extracurriculars:** Piano (6 years training), Madhubani Art (11 years training), Mountain Climbing (Mt. Jbel Toubkal, Mt. Pico De Orizaba), Running (Tübingen 100km Staffelauf, Tübingen 3k Erbe Lauf), Montréal Club Soccer, Sky-diving (13k), Travelling (54 countries, 4 continents) and Cooking.

## Education

**Max Planck Institut für Intelligente Systeme**, PhD in Computer Science                    Sept 2024 – Present
- **Supervisors**: Antonio Orvieto (MPI-IS) and Volkan Cevher (EPFL).
- **Fellowships:** IMPRS-IS (2025-2028), ELLIS (2024-2027) and Amazon Science Hub PhD Fellowship (2024-2027).
- **Research Topic:** Neural Network design and limitations of foundation models. **Publications**: 1x ICSE (Oral), 1x ACL, 1x EMNLP, 2x NeurIPS-W, 3x ICLR, 1x TMLR, 2x ICLR-W.

**Mila, Université de Montréal**, MSc in Computer Science                    Sept 2021 – May 2024
- **Supervisors**: Irina Rish.
- **Awards:** Quebec Higher Education Ministry International Students Scholarship (2022,2023), UNIQUE AI MSc Excellence Research Scholarship (2022), Mila Entrepreneur's Grant (2022).
- **Research Topic:** Learning under constraints. **Publications**: 1x CoLLAs, 3x ICLR-W (1x Oral), 1x NeurIPS-W.

## Experience

**Research Associate I**, Carnegie Mellon University – Pittsburgh, PA                    Oct 2023 – May 2024
- **Supervisor**: Fernando De La Torre (RI) and Hao Chen (MLD)
- **Research Topic**: Diffusion Models. **Publication**: 1x NeurIPS Spotlight.

**Machine Learning Researcher**, Morgan Stanley – Montréal, QC                    May 2022 – Feb 2023
- **Supervisor**: Kashif Rasul (MS) and Irina Rish (Mila)
- **Research Topic**: Time Series Foundation Models and Model Reprogramming.

**Growth Machine Learning Engineer**, Weights&Biases – Remote                    Dec 2021 – Oct 2022
- **Supervisor**: Lavanya Shukla
- **Work Profile**: Integration of W&B Tracking into libraries like Avalanche and setting up W&B Reproducibility ML Challenge (2x).

**Founder and President**, Landskape AI – BayRidge, NY                    Sep 2019 – Oct 2023
- **Supervisors**: Javier Ideami (Ideami Studios), Jaegul Choo (KAIST), Pin Yu Chen (IBM) and Federico Lois (RAVEN DB).
- **Research**: Design fundamentals of Neural Networks. **Publications**: 1x BMVC, 1x WACV, 1x CVPR-W.

## Technical Skills

**Deep Learning:** Proficient in PyTorch and JAX.

**Mathematics:** Probability, Statistics, Linear Algebra, Optimization, Game Theory and Argumentation Frameworks.

**Compute Cluster Management:** Condor and SLURM.