

Tharindu Madusanka

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<https://itharindu.github.io/>

Education

University of Manchester, UK

September 2021 - December 2024

PhD in Computer Science; GPA: 4.0 / 4.0

University of Moratuwa, Sri Lanka

October 2016 - April 2021

BSc (Hons) in Computer Science and Engineering; GPA: 4.1 / 4.2 (3rd in the Batch)

Research & Work Experience

Turing ; California, USA - *Data Scientist*

May 2021 - November 2021

- Analysed and modelled data related to product engineering, supply and demand forecasting, sales, and marketing
- Supervisor: Mukul Joshi (Head of Data Science and Machine Learning)

University of Moratuwa ; Sri Lanka - *Research Scientist*

March 2021 - October 2021

- Implemented a Machine translation system based on multilingual LLMs for low-resource settings in the Legal/Governance domain
 - Best performing translation system for Si-En-Ta translations
- Supervisor: Prof. Gihan Dias

University of Moratuwa ; Sri Lanka - *Undergraduate Researcher*

December 2019 - December 2020

- Worked on a low-resource dialogue policy optimisation project based on Reinforcement Learning
- Supervisor: Dr Uthayasanker Thayasivam, Prof. Sanath Jayasena

Zeptolytics ; Colombo, Sri Lanka - *Machine Learning Intern*

June 2019 - December 2019

- Designed and implemented a automated predictive engine that went to production
- Supervisor: Suresh Santhiran (CTO)

Scheduled internship

Amazon ; London, UK - *Applied Science Intern*

August 2024- October 2024

- Project related retrieval augmented generation (RAG)

Publications

Hard Satisfiability Problems: Where they are and can transformer-based language models solve them?

ACL, 2024

Tharindu Madusanka, Ian Pratt-Hartmann, Riza Batista-Navarro

Probing the Uniquely Identifiable Linguistic Patterns of Conversational AI Agents

ACL, 2024

Iqra Zahid, Tharindu Madusanka, Riza Batista Navarro, Youcheng Sun

Which Side Are You On? A Multi-task Dataset for End-to-End Argument Summarisation and Evaluation

ACL, 2024

Hao Li, Yuping Wu, Tharindu Madusanka, Viktor Schlegel and 6 others

Not All Quantifiers are Equal: Probing Transformer-based Language Models' Understanding of Generalised Quantifiers

EMNLP, 2023

Tharindu Madusanka, Iqra Zahid, Hao Li, Ian Pratt-Hartmann, Riza Batista-Navarro

Identifying the limits of transformers when performing model-checking with natural language

EACL, 2024

Tharindu Madusanka, Ian Pratt-Hartmann, Riza Batista-Navarro

Winner - Outstanding Paper award

Dialogue policy optimization for low resource setting using Self-play and Reward-based Sampling

PACLIC, 2020

Tharindu Madusanka, Durashi Langappuli, Thisara Welmilla, Uthayasanker Thayasivam, Sanath Jayasena

Under review		
Unravelling the Logic: Investigating the Generalisation of Transformers in Numerical Satisfiability Problems	Tharindu Madusanka, Marco Valentino, Ian Pratt-Hartmann, Riza Batista-Navarro	EMNLP , 2024
Who wrote that? Utilising Stylometric Ensemble Methods for Authorship Attribution	Iqra Zahid, Tharindu Madusanka, Riza Batista Navarro, Youcheng Sun	Computational Linguistic , 2024
Probing the neural approaches understanding of formulae	Marco Valentino, Tharindu Madusanka, Ian Pratt-Hartmann, Riza Batista-Navarro	Neurips , 2024
Not all problems are Equal: Exploring the Influence of Computational Complexity on Neural Network Efficiency	Tharindu Madusanka, Marco Valentino, Ian Pratt-Hartmann, Riza Batista-Navarro	Neurips , 2024

Technical Skills

Programming Languages : Python (proficient) , Java , JavaScript
Research interests: NLP / NLU, Reinforcement Learning, LLMs, Semantics, Evaluation Pipelines, Neuro-symbolic AI
Databases : SQL, NoSQL, BigQuery
Deep Learning Libraries : Pytorch, Tensorflow, Huggingface, PEFT

Teaching

University of Manchester ; UK - <i>Teaching Assistant</i>	February 2022- May 2024
<ul style="list-style-type: none"> COMP34812 - Natural Language Understanding, COMP34312 - Mathematical Topics in Machine Learning, COMP34711 - Natural Language Processing, COMP24011 - Introduction to AI, COMP24412 - Knowledge-based AI, COMP61332 Text Mining 	
University of Moratuwa ; Sri Lanka - <i>Teaching Assistant</i>	August 2020 - May 2021
<ul style="list-style-type: none"> CS4622 - Machine Learning, CS1032 - Programming Fundamentals , CS3042 - Database Systems 	

Talks

Reasoning with Natural Language	May 2024
PhD symposium, University of Manchester	
Identifying Limits of Transformers when model-checking with natural language	May 2023
EACL conference	
Dialogue policy optimization for low resource setting using Self-play and Reward-based Sampling	October 2020
PACLIC conference	

Achievements

Research	
<ul style="list-style-type: none"> Outstanding Paper Award at EACL (First-author publication) Best Paper award nomination at ACL (First-author publication) Carole Globe Prize - Runners up Best Student paper (First-author publication) 	
Academia	
<ul style="list-style-type: none"> Dean’s List at every semester (awarded to students with SGPA over 3.8). Rank 3rd in the batch. 	
Competitions	
<ul style="list-style-type: none"> Expert rank in Kaggle competitions. Rank 3rd in the Quantopian competition (global finance competition) 	

Volunteering Activities

<ul style="list-style-type: none"> Reviewer for venues such as NAACL, ACL and EMNLP. Volunteer for COLING 2020. Chairperson for the CSE career fair at the University of Moratuwa. 	
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