

Mohamed Nazaal Ibrahim

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Research Interests

Using methods from probabilistic machine learning in conjunction with advances in modern deep learning, specifically, in models used for scientific discovery and foundation models. For example, developing proper uncertainty quantification for LLMs, using amortized inference to make probabilistic approaches more scalable etc.

Education

Aalto University

PhD in Machine Learning

Espoo, Finland

Oct 2021 - Present

- Working on probabilistic machine learning for human-AI collaboration under the [ELLIS](#) meta-program.
- Main supervisor: [Professor Samuel Kaski](#)
- Thesis advisor: [Dr Ti John](#)
- Exchange supervisor: [Professor Stefano Albrecht](#)
- Relevant Coursework: LLM seminar, Deep generative models seminar

KTH Royal Institute of Technology

Masters in Applied and Computational Mathematics

Stockholm, Sweden

Aug 2019 - June 2021

- Thesis: [Causal Discovery Algorithms for Context-Specific Models](#). Supervised by: [Dr Liam Solus](#).

University of Bristol

Bachelors in Mathematics and Computer Science

Bristol, UK

Sept 2016 - June 2019

- First class honours, 3rd in cohort.
- Thesis: On Latent Gaussian Process Regression and Bayesian Quadrature. Supervised by: [Professor Carl Henrik Ek](#).

Center for Higher Second Education

A levels

Male', Maldives

May 2013 - July 2015

- Final year average: 97%

Experience

Teaching Assistant

Aalto University

Espoo, Finland

Feb 2024 – Present

- CS-E4895 Gaussian Processes (MSc Unit). Unit director: [Professor Arno Solin](#)
- Course received 5th place in the computer science department large courses category in 2024.

Research Assistant (Part-time)

KTH Royal Institute of Technology

Stockholm, Sweden

Jan 2021 - June 2021

- Implementing deep learning models on CT imaging data related to COVID-19 cases. Done in collaboration with the Karolinska Institute. Supervised by Mats Persson.

Research Intern

Huawei

Gothenburg, Sweden

June 2020 – Aug 2020

- Worked on probabilistic machine learning methods for optimization problems arising in antennas.

Research Intern

Visual Information Laboratory, University of Bristol

Bristol, UK

June 2018 – Aug 2018

- Worked on Convolutional Neural Networks for semantic segmentation, used for 6D pose estimation in drones. Supervised by Professor Andrew Calway.

Teaching Assistant

University of Bristol

Bristol, UK

Sept 2017 – June 2019

- Sept 2017 - June 2018: Mathematical methods for computer scientists (Year 1 unit). Unit director: Professor Kerstin Eder.

- Sept 2018 - June 2019:

Lead TA for Mathematical methods for computer scientists (Year 1 unit). Unit director: Professor Kerstin Eder.

Coding and number theory (Year 2 unit). Unit director: Dr David Bernhard.

Algorithms (Year 1 unit). Unit director: Professor Conor Houghton.

Probability and statistics (Year 1 unit). Unit director: Professor Conor Houghton.

Intern

Maldives Monetary Authority

Male', Maldives
Aug 2017 – Sept 2017

- Worked as a web development intern at the Maldivian central bank.

Technology Stack

- **Machine learning implementation:** JAX, PyTorch, Numpy
- **Running experiments:** MLFlow, Hydra, Slurm
- **Other:** GNU Coreutils, Shell scripting, Docker, GNU Emacs

Publications

[Targeted Causal Elicitation](#)

2022

[NeurIPS 2022 Workshop of Causality for Real-World Impact](#)

Services

- **Reviewing,** [NeurIPS 2024 Workshop on Bayesian Decision-making and Uncertainty](#)
- **Organizing** [ELLIS Doctoral Symposium 2023](#)

Achievements

KAUTE Foundation Grant (EUR 24 000)

KAUTE Foundation, Finland

Working grant for doctoral students. [Acceptance rate ~ 10% \(39/387\)](#)

KTH Scholarship (~ USD 38 000)

KTH Royal Institute of
Technology

Merit based scholarship covering full tuition fees, given to incoming international masters degree students. Acceptance rate ~ 1.5% (30/2000+)

Maldivian President's Scholarship (~ USD 130 000)

Rep. of Maldives

Most prestigious scholarship for Maldivian high-school students given for achieving the highest grades. Covers all expenses for undergraduate university education. Acceptance rate ~ 1.4% (28/2000+)

Barry Thomas Scholarship (~ USD 600)

University of Bristol

Given to the highest achieving international students starting at the University of Bristol

3rd place, 2025 Aalto AI Hackathon Microsoft Challenge

AaltoAI

Developed LLM agent-based solution for field technicians. 48-hour challenge.

3rd place, 2020 Huawei AI Hackathon

Huawei

Task was to get the best predictive performance given some data. First step was to identify the problem as semi-supervised learning. Our solution involves autoencoder based feature extraction coupled with convolutional networks. 24-hour challenge.

Best Product, 2018 Boeing Computer Science Society Hackathon

Boeing

Space themed event. We built a system that detects crashes based on an accelerometer attached to a helmet, where a satellite modem sends signals visible on a web interface. 48-hour challenge.

3rd place, 2018 G-Research Sentiment Analysis Challenge

G-Research

Classify whether sentences within a financial context signified positive, negative or neutral sentiment. Our solution involves using Python's NLTK and spaCy.

Positions of Responsibility

Board Member, Aalto University Doctoral Researchers Association

Aalto University

President, Bristol University Research Society

University of Bristol