

Ephrem T. Mekonnen

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Dublin, Ireland

Experience

- **LIFETOUCH srl**

Software Developer - Parma, Italy

Implemented WebSocket communication for interaction between users and the server, enabling continuous updates and control of the autonomous rover. Implemented RESTful APIs for real-time communication between the server and the rover, handling path orders and status updates. Worked on map integration and other functionalities in a Flutter mobile app for tracking the rover's real-time location.

April 2022 to July 2022

- **Fondazione Bruno Kessler - FBK**

Research Intern - Trento, Italy

Incorporate a word-based language model in CTC Beam Search Decoder for E2E ASR and developed an experimental setting for testing the performance of an end-to-end neural model for keyword spotting.

February 2021 to October 2021

- **Haramaya University**

Assistant Lecturer - Haramaya University, Ethiopia

Delivered lectures, seminars, and tutorials. Designed, prepared, and developed courses and teaching materials and supported students through a pastoral or advisory role

September 2017 to August 2019

Educations

- **PhD Student**

TU Dublin, Ireland

Degree expected [10/2026]

- **MSc. in Computer Science**

University of Trento, Italy

December 2021

- **BSc. in Computer Science**

Addis Ababa University, Ethiopia

July 2017

Skills

- **Languages & Frameworks**

Java, Python, HTML, CSS, C#, Bash scripting, fast.ai, PyTorch

- **Patterns & Practices**

Object Oriented Programming, Functional Programming

- **Cloud - based Technologies**

Docker, Kubernetes, Azure

Projects

- **End to End Keyword Spotting [E2E KWS]**

An end-to-end low resource keyword spotting through a character level LSTM and connectionist temporal classification loss function (Thesis project)

Python

- **Deploying Web Application using Docker and Kubernetes [Fog and Cloud Computing course project]**

Deployed web app with Docker & Kubernetes for scalable web server management optimization.

- **LOMATCE: Local Model Agnostic Time-series Classification Explanation [LOMATCE]**

LOMATCE is a new XAI method, akin to LIME, but specifically designed for time series data.

Python

Certifications

- Python for Data Science and AI by IBM on *Coursera*

- Neural Networks and Deep Learning on *Coursera*

- Machine Learning with Python on *Coursera*

- Learning Bash Scripting on *LinkedIn*

- Data Analysis with Python on *Coursera*

- Check out my [LinkedIn](#) for more certifications

Publications

- **End-to-End Low Resource Keyword Spotting Through Character Recognition and Beam Search Re-scoring** [Presented at ICASSP 2022] *Mekonnen et al.*

This work was completed during my internship at Fondazione Bruno Kessler (FBK), Trento, Italy.

- **Explaining Deep Learning Time Series Classification Models using a Decision Tree** [Poster] *Mekonnen et al.*

Presented at the XAI-2023 Conference, Lisbon, Portugal, July 26-28, 2023.

- **A Global Model-Agnostic Rule-Based XAI Method based on Parameterised Event Primitives for Time Series Classifiers** [Journal] *Mekonnen et al.*

Published in Frontiers in Artificial Intelligence, September 2024.

- **Interpreting Black-Box Time Series Classifiers using Parameterised Event Primitives** [Poster] *Mekonnen et al.*

Presented at the XAI-2024 Conference, Valletta, Malta, July 17-19, 2024.

- **Explaining Time Series Classifiers Through Post-Hoc XAI Methods Capturing Temporal Dependencies** [Doctoral Consortium] *Mekonnen et al.*

Presented at the XAI-2025 Conference, Istanbul, Turkey, July 09-11, 2025.

- **LOMATCE: Local Model Agnostic Time-series Classification Explanation** [Journal] *Mekonnen et al.*

Published in IEEE Access, October 2025.