

Kjanija Mersimoski

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Passionate about technology in general and AI in particular, I am a second-year Data Science and Artificial Intelligence master's student at the University of Trieste. I spend the rest of my free time with either a book in my hands or out for a walk or hike.

Projects

Head Atlas - Natural Language Processing

Interpretability of Large Language Models. The project aims to explore the specialization of internal components of LLMs.

Normative Shield - Safe and Verified AI

Development of a Normative Shield for fairness in Reinforcement Learning that mitigates bias in RL agents trained on distorted data, by monitoring demographic parity in real time and intervening on unfair decisions.

High Performance Heat Diffusion Solver - High Performance Computing

Implemented hybrid parallelization with OpenMP and MPI of a 2D solver for the heat equation with a five-point stencil. Then performed analysis of *strong* and *weak scaling* on HPC clusters (Leonardo and Orfeo).

Alzheimer's Disease Classification - Deep Learning

Developed a hybrid Deep Learning *pipeline* for classifying the severity of Alzheimer's from MRI scans: preprocessing into 2D superpixel graphs; Graph Attention Network for per-slice embedding; LSTM on 60 slices to capture 3D context and final classification.

Education

University of Trieste

2024 - Present

Trieste, Italy

M.Sc. in Data Science and Artificial Intelligence.

Curriculum: Foundations of Artificial Intelligence and Machine Learning

University of Trieste

2021 - 2024

Trieste, Italy

B.Sc. in Artificial Intelligence and Data Analytics

Evaluation: 102/110

Thesis: Noise Cancelling in ECG Signals with EEMD Decomposition and Genetic Algorithms

(Original title: *Pulizia del rumore in segnali ECG con scomposizione EEMD e algoritmi genetici*)

I.T.s.T. "Arturo Malignani" Cervignano

2016 - 2021

Cervignano del Friuli, Italy

High School, Telecommunications

Evaluation: 100/100 cum laude

Skills

Programming Languages: Python (Including libraries like numpy, pytorch, scikit, pandas and matplotlib), C (and it's use with OpenMP), R

Tools: Git, Docker, VS Code, unix CLI

Languages

Italian (Native), English (Professional, B2), Macedonian (Native)