# Kjanija Mersimoski

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Passionate about technology in general and AI in particular, I am a first-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)