Università degli Studi di Messina, Italia
Dipartimento di scienze matematiche e informatiche,
scienze fisiche e scienze della terra

Soggetto: proposta di tirocinio

ID	PTI_Distefano Salvatore_14/11/2024 20.08.48
Data	14/11/2024 20.08.48

Supervisore del progetto

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Co-Supervisore del progetto

Cognome	
Nome	
Posizione	
Dipartimento	

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Laboratorio	
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Dettagli del progetto

Titolo	Quantitative AI

Descrizione dettagliata: Quantitative AI focuses on defining metrics, measurements, models, benchmarks and techniques to quantitatively assess AI.

AI assessment is a crucial process to measure the effectiveness, reliability, fairness, and safety of AI systems. It involves a systematic evaluation of an AI model performance against predefined objectives.

The metrics used vary depending on the AI task, but some common ones include:

Accuracy: Percentage of correct predictions.

Precision: Percentage of correct positive predictions out of all positive predictions.

Recall: Percentage of correct positive predictions out of all actual positive instances.

F1-score: Harmonic mean of precision and recall.

AUC-ROC (Area Under the Curve - Receiver Operating Characteristic): Measures the model ability to distinguish between positive and negative classes.

Response Time: Speed at which the model produces an output.

Computational Cost: Computational resources required to run the model.

Assessment Methods

Challenges in AI Assessment are:

Bias: Training data can contain biases that influence the AI's performance.

Explainability-Interpretability: Understanding the internal reasoning of some AI models can be difficult.

Evolving Environments: The environment in which the AI operates can change over time, requiring continuous assessment.

There are some techniques and tools in Quantitative AI. One of the most interesting is the SAFE Framework, focusing on sustainability, accuracy, fairness, explainability - SAFE - properties. Other relevant metrics and tools have been defined.

The students goal will be to investigate on relevant literature to retrieve and compare state of the art solutions for Quantitative AI.

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REFERENCES:
https://www.sciencedirect.com/science/article/pii/S0957417424021067
https://github.com/GolnooshBabaei/safeaipackage?tab=readme-ov-file

Durata (mesi – max 12)	<<Durata in mesi>>
Durata (ore)	<<Durata in ore>>
Numero di posizioni aperte	4

Competenze richieste dal tirocinio

Requisiti tecnici: AI, programming	
Altri requisiti	