IRENE DOVICHI

COMPUTER SCIENCE STUDENT

EDUCATION

University of Pisa

MSc in Computer Science (AI curriculum)

University of Pisa

BSC IN MATHEMATICS Graduated with 110/110 cum laude.

Liceo Scientifico A. Vallisneri

HIGH SCHOOL SCIENTIFIC DIPLOMA

• Passed with 100/100

WORK EXPERIENCE

TeCIP Institute, Scuola Superiore Sant'Anna

External Collaborator

- Analysis and testing of machine learning algorithms for optimal resource management.
- Technical Skills: Python with Keras, NumPy, Matplotlib, Pandas, Scikit-learn.
- Soft Skills: Time Management, Communication, Presentation skills.

Stand assistant for Star Comics at Lucca Comics & Games 2022

UNIVERSITY PROJECTS

Neural Network from scratch in Python

PROJECT FOR A MSC EXAM

· Developing of a fully connected, feed-forward Neural Network without off-the-shelf libraries. Definition of a training method with the Stochastic Gradient Descent algorithm. Performance analysis for both the classification task and the regression task.

Informed Genetic Algorithm for maze solving

PROJECT FOR A MSC EXAM

· Implementation and analysis of a method that incorporates genetic algorithms and knowledge-based strategies to solve the pathfinding problem within the NetHack game environment.

Data Mining Project

PROJECT FOR A MSC EXAM

• Data Understanding and Preparation on a given dataset, application of various clustering techniques, predictive analysis on a binary feature, application of explainability methods (LIME, SHAP, EBM).

Solving a Convex Quadratic Programming Problem

PROJECT FOR A MSC EXAM

· Ad hoc modeling of the Frank-Wolfe algorithm for the convex quadratic non-separable knapsack problem and convergence analysis. Implementation in MATLAB and discussion of the results.

Solution Methodologies for Integer Linear Programming Problems

BACHELOR'S THESIS

- · Theoretical presentation of the Lagrangian Relaxation and the Subgradient method, and modeling for particular network optimization problems.
- Theoretical presentation of the Dantzig-Wolfe Decomposition method.
- Application of the presented methods to the Minimum Cost Multicommodity Flow problem.

SKILLS_

Programming MATLAB, LaTex, C, Python

Feb. 2023 - Present

Pisa, IT Sept. 2018 - Feb. 2023

Lucca, IT

Pisa, IT

2013 - 2018

Pisa, IT Sept. 2023 - Feb. 2024

Lucca, IT

University of Pisa

Nov. 2023 - Jan. 2024

University of Pisa Oct. 2023 - Jan. 2024

University of Pisa

Oct. 2023 - Jan. 2024

University of Pisa

Apr. 2023 - July 2023

University of Pisa

Oct. 2022 - Feb. 2023



ItalianNative proficiencyEnglishProfessional proficiencyFrenchElementary proficiency