ARTIFICIAL INTELLIGENCE

PNRR - Visual geolocalization from 2D/3D data

Funded By	MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [P.iva/CF:97429780584] Politecnico di TORINO [P.iva/CF:00518460019]

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Context of the research activity	Develop novel solutions that could leverage 2D and 3D information at large scales. Progetto finanziato nell'ambito del PNRR. PNRR M4C2, Investimento 1.3 - Avviso n. 341 del 15/03/2022 - PE0000013 Future Artificial Intelligence Research (FAIR) - CUP E13C22001800001

Objectives	Visual geolocalization, the task of predicting the coordinates where an image was captured from its visual content, is generally addressed as an image retrieval problem. This formulation can scale to large-sized datasets and could be paired with pose refinement on 3D maps. Yet, using 3D maps for this purpose has been limited to small-scale environments. This project aims to develop novel solutions that could leverage 2D and 3D information at large scales.

Skills and competencies for the development of the activity	The project requires machine learning and deep learning knowledge, with all their prerequisites (statistics, mathematics, optmisaton, …). Moreover, it requires good experience with Python and PyTorch (other deep learning frameworks, such as Tensorflow or PyTorch Lightning, are considered a plus). The candidate should also be proactive and self-driven to study and read the most recent literature.