

ELECTRICAL, ELECTRONICS AND COMMUNICATIONS ENGINEERING

PNRR/RESTART - ML for zero-touch optical network automation and management

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	<p>Future optical transport networks shall be capable of massively scaling capacity to accommodate traffic requirements generated by future applications such as the 6G infrastructure. Thus, they will require a seamless software-defined-networking control, relying on optical layer abstraction and pervasive telemetry data collection to feed machine learning algorithms for resource optimization and fault management, that will lead to a sustainable zero-touch optical network.</p> <p>PNRR M4C2, Investimento 1.3 - Avviso n. 341 del 15/03/2022 - PE0000001 REsearch and innovation on future Telecommunications systems and networks, to make Italy more smart (RESTART) - CUP E13C22001870001</p>
Objectives	<p>The goal of this research activity is building a framework for an AI-assisted autonomic network supporting zero-touch real-time operations, i.e., the development of an autonomic control plane for the optical network that comprises a closed-control-loop engine able to collect and analyze data in order to make decisions, and act on the network devices. Control-loops will be implemented at various levels, massively relying on the use of monitoring data and on the application of AI/ML approaches.</p>
Skills and competencies for the development of the activity	<p>Knowledge of Machine Learning; advanced programming skills; background knowledge on optical networks is preferential;</p>