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## the PhD's pitch



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Our PhD members explain to students, colleagues and professors...

*Politecnico di Torino - Room 7*  
**26th July 2023 - 5.00 PM**

## Robustness of the **In-Plane Data Crossing** for **Molecular Field-Coupled Nanocomputing**

Ms. **Giuliana Beretta**, PhD Candidate, DET.



The **molecular Field-Coupled Nanocomputing** is a promising implementation of the Quantum-dot Cellular Automata paradigm for future **low-power digital electronics**. It encodes the **logic information** in **molecules charge distribution**. Thus the electrostatic molecular characteristics play a relevant role in the interaction and consequently influence the functioning of the circuits, opening the way for tailoring molecules and layouts to obtain specific behaviors.

## Portfolio Allocation Based on Time Series Analysis

Mr. **Jacopo Fior**, PhD Candidate, DAUIN.

**Selecting stock portfolios** involves maximizing long-term returns and minimizing risk. This study adapts **Markowitz's model** to consider sets of candidate portfolios rather than individual stocks, reducing complexity and enabling the enforcement of portfolio-level constraints. Furthermore, the study introduces a novel strategy based on **time series clustering** to enhance stock **portfolios diversification**.



## Study and development of a real-time pilot performance monitoring system

Mr. **Gabriele Luzzani**, PhD Candidate, DIMEAS.



Two key challenges facing the **aviation market** today are rising operating costs and the decreasing availability of pilots, pushing for new solutions such as **Single Pilot Operations** (SPOs). Our project provides an answer in this direction by leveraging the **physiological assessment of pilots' mental workload** to guarantee the same safety level in SPOs.



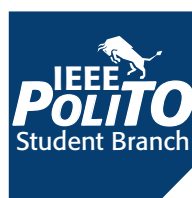
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