



Seminari per il Corso

“Future Computing Architectures and Programming Paradigms”

Corso di Laurea in Ingegneria Informatica Magistrale

14 Maggio 2024 – ore 10:00/11:30 - 11:30/13:00

Sala del Consiglio – Dipartimento di Ingegneria – via Roma n. 29 - Aversa

Distributed Quantum Computing: from Compiling to Execution Management

Prof. Michele Amoretti

Quantum Software Laboratory -
University of Parma

The growing demand for large-scale quantum computers is pushing research on Distributed Quantum Computing (DQC). Recent experimental efforts have demonstrated some of the building blocks for such a design. DQC systems are clusters of quantum processing units (QPUs) connected by means of quantum network infrastructures. Their extension ranges from the single box to the geographical scale. Furthermore, they can be integrated with classical High Performance Computing systems. Besides quantum networking challenges, DQC faces two important problems: i) quantum compilation and ii) execution management of quantum programs. In this talk, we present our recent and ongoing research activities concerning these two problems.

Quantum Machine Learning: General concepts and some research perspectives

Prof. Claudio Sartori

Università di Bologna

The growing interest in QC and the promise of increasingly powerful quantum machines in the near future have led researchers from different computer science areas to consider these new ideas to find solutions to problems of increasing size and complexity, to compare them with solutions based on HPC and, possibly, go beyond. Here we will consider quantum machine learning, "looking at the opportunities that the current development of quantum computers opens up in the context of intelligent data mining. Does quantum information add anything new to the way machines recognize patterns in data? Are quantum computers more effective at machine learning than classical computers?" (Schuld and Petruccione). In this talk we will set the context of the topic and discuss some research perspectives.

Organizzatore e Moderatore: **Prof. Beniamino Di Martino**

Link al Teams:

<https://teams.microsoft.com/l/meetup-join/19%3a475f3fb8f4234b509b54d90956d22f18%40thread.tacv2/1715002596255?context=%7b%22Tid%22%3a%228f547aef-14d7-49ca-a4d4-51a6c5cb92c1%22%2c%22Oid%22%3a%2224758d6f-12cb-45cf-a468-3b11ac6282d3%22%7d>