Some Proposals of Papers for the Oral Exam

Intensive Computation

Annalisa Massini   *Lecture* *23*
2021-2022

Papers and / or Projects

In the following, there is a list of papers you can consider for the oral exam, which will typically consist in a presentation

They are examples and any choice must be agreed with the teacher

In the paper list you can find very different papers:

- A short and easy paper should be accompanied by some implementation or simulation, or compared with other solutions
- A long and difficult paper can be cut and a shorter part could be considered for presentation

- You can propose other papers or projects, but your proposal must focus on one of the topics of the course

Quantum circuits: adders

Paper on Select-Carry Adder

- *Design of Carry Select Adder with Online Testability Using Reversible Gates* - P. S. K. Reddy, G. Saini - IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT), 2019
- https://drive.google.com/file/d/1upcp4OmOcbyCPTib05uOOfu7eTUmXMcz/view?usp=sharing

Paper on Carry Lookahead Adder

- *Quantum circuit designs of carry lookahead adder optimized for T-count T-depth and qubits* - H. Thapliyal, E. Munoz-Coreas, V. Khalus - Sustainable Computing: Informatics and Systems, 2021
- https://drive.google.com/file/d/1qu4Arfm362ZKx2ODq4XCFcja1utzOIwm/view?usp=sharing

- Adders described on the Thesis *Arithmetic circuits for quantum computing: a software library*, L. Raggi, 2020

Quantum circuits: multipliers

Paper on Multipliers

- *Reversible multiplier with a column-wise structure and a reduced number of ancilla inputs and garbage outputs* - S. M. Shahidi, S. E. Borujeni - The Journal of Supercomputing, 2022
- https://drive.google.com/file/d/1OS8RblZhzfn1Myioles2ffzJ6ZpEja1D/view?usp=sharing

- *Cost-efficient design of a quantum multiplier–accumulator unit* – H. Md. H. Babu - Quantum Information Processing, 2017
- https://drive.google.com/file/d/1O5EaIemNsEFUaVSwb9Yk1O0nTkRRyBhP/view?usp=sharing

Interconnection networks: Fat trees

Paper on all-to-all

- *Bandwidth-optimal All-to-all Exchanges in Fat Tree Networks* – Prisacari, Rodriguez, Minkenberg, Hoefler - ACM Int. Conf. on Supercomputing, 2013
- https://drive.google.com/file/d/1OS8RblZhzfn1Myioles2ffzJ6ZpEja1D/view?usp=sharing

Paper on routing

- *Global Round Robin: Efficient Routing With Cut-Through Switching in Fat-Tree Data Center Networks* – Z. Qian, F. Fan , B. Hu , K. L. Yeung, L. Li - IEEE/ACM Transactions on Networking, 2018
- https://drive.google.com/file/d/1giNW6tOgRNpH8O0YNRHLBnjzs3R7fWCB/view?usp=sharing