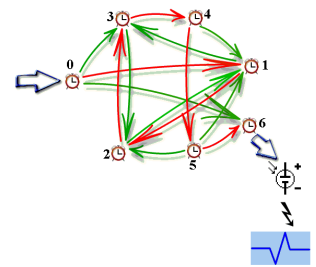


Scope

CALL FOR PAPERS

Special issue on Optical SuperComputing

Natural Computing journal, Springer-Verlag



Using light, instead of electric power, for performing computations is an exciting idea whose applications can be already seen on the market. Without any doubt photons play an important role for transferring information and doing some low-level information processing. Current research concerning ultrafast-switches and detectors as well as the usage of quantum mechanical properties of photons have led to a renewed interest in optical processing. This choice is motivated by several features that light has:

- It is very fast. Actually the fastest thing that we know, and speed is exactly what we need for our computers.
- It can be easily manipulated (divided, transported, delayed, split, etc).
- It is very well suited for parallelization.

It is hoped that these features along with other properties can make optical computers to perform better than the electronic counterparts in the future.

We are soliciting papers in the following areas (but not limited to):

- Optical architectures for solving problems.
- Theoretical aspects of optical devices for solving problems.
- Practical implementation of existing or new optical solutions.
- Analysis of the existing devices.
- Logic gates implemented optically.
- Hybrid devices where light plays a part but not all.
- Niche applications / problems where light could perform better than the electronic devices.
- Optical implementations of some well known algorithms (AI algorithms, brute-force, heuristics, etc).
- Optical storage systems.
- Other signal-based devices which can simulate the optical ones.

Special Issue Committee

Shlomi Dolev, Ben-Gurion University, Israel, <http://www.cs.bgu.ac.il/~dolev/>

Mihai Oltean (contact editor), Babes-Bolyai University, Romania, <http://www.cs.ubbcluj.ro/~moltean/>

Tobias Haist, Stuttgart Universitat, Germany, <http://www.uni-stuttgart.de/ito/Institut/Institutsmitglieder/haist.htm>

Important Dates

Submission of papers: 15th of January 2009

Decision Notification: 15th of April 2009

Camera ready & revised papers: 15th of May 2009

Submission of papers

The material in a paper must represent substantially new work that has not been previously published.

Submit your paper through NACO submission system: <http://naco.edmgr.com>. You MUST choose "SI: Optical Supercomputing" as the category of your submission.

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