TER Project - Optionals

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Optional additions

- Out-of-core support. (easy)
- Parallel worker support for multi-threaded BLAS. (medium)
- Hierarchical DAG support. (medium)
- MPI simulation support with StarPU - SimGrid. (hard)
  SimGrid Documentation
- Tensor Core support for GPU operations. (hard)
  cuBLAS Tensor Cores
  Tensor Core Tips
  Programming Tensor Cores
  Paper (part 13 - multiword arithmetic)
- Something else interesting...

Report information

- French or English !
- **Maximum** 30 pages using this template.
- About 10 pages on: Task-based runtime system theory, other runtime systems than StarPU (2 or 3), comparing how they operate with StarPU.
- About 5 pages on: Implementation details for your code, methodology, problems encountered, solutions to the problems, etc.
- About 5 pages on: Implemented optional parts.
- About 10 pages on: experiments and benchmarks using your code, these could cover all kinds of use cases (CUDA vs CPU, MPI vs single node, data size, tile size, etc, a mix of the previous, etc).

Presentation information

- Should be a pedagogical summary of your report.
- Similar structure to the report.
- 15 min of presentation and 10 min of discussion.
- Submit report and presentation slides in pdf format in a folder in your Git repository.

Next

Continue working on the TER project.

```
# Login to cluster
ssh qdcster_XX@chome.metz.supelec.fr
# Allocate a machine to work on
salloc --partition cpu_tp_resa --time 4:00:00
       --reservation M1QDCS_TERSTARPU18 --exclusive
# Allocate multiple machines to run code interactively
salloc --partition cpu_tp_resa --qos 8nodespu
       --reservation M1QDCS_TERSTARPU18 --nodes 4
       --exclusive --time 4:00:00
# Run code with sbatch non-interactively
sbatch --partition cpu_tp_resa --qos 8nodespu
       --reservation M1QDCS_TERSTARPU18 --nodes 4
       --exclusive --time 4:00:00
       --export=ALL batch.sl
```