

# Software Design L4: Patterns for Parallel Software Development

*Thursday 10 July 2025 08:45 (1 hour)*

This lecture will present a set of common patterns in parallel programming. The sequential origin of these patterns will be discussed, as well as the restrictions that they impose. A particularly successful combination of patterns, Map-Reduce, will be described in detail and examples of its everyday use at large scale will be given. On the other hand, it will be shown how high-level features like C++ lambdas, the TBB library or the Spark framework can help get started with the aforementioned parallel patterns.

## Summary

**Presenters:** GHEATA, Andrei (CERN); HAGEBOECK, Stephan (CERN)