

Good morning.

My name is Aleksandr Maramzin and I am a MSc by Research student from the last cohort and currently I am working on the Software Parallelisability Metrics project mostly under the supervision of the Professor Bjorn Franke.

The problem we are looking at is that there are a lot of various software quality metrics (cyclomatic complexity might serve as an illustrative example), which judge about such software qualities as its readability, maintainability and alike. But none of these existent metrics can be applied to parallelisability property of software.

Two code snippets on the right-hand side of slide illustrate the problem. Here we have simple vector multiplication implemented with a regular array data structure on the left and the same multiplication implemented with a linked list on the right. The second data structure choice makes this inherently parallel algorithm hard to parallelise.

We use LLVM as a pathfinding tool. Good parallelisability metrics could be integrated into various IDEs, which would ease a hard task of parallel programming.

If you have any ideas on the topic or would like to discuss it in a more details you can talk with me during the poster session.

Thank you!