



To:

Prof. Tobias Nipkow
Institut für Informatik, Lehrstuhl XXI
Technische Universität München
Boltzmannstr. 3
D-85748 Garching
Germany

Stockholm, March 25th, 2024

Recommendation to prolong MSc thesis

Dear Prof. Nipkow,

Mr Sebastian Thomas Willenbrink is a double degree student of computer science at KTH with the Technical University of Munich as his home university. Since October 15th, 2023, I have been supervising his Master's thesis with the title "A Type System for Ensuring Safe, Structured Concurrency in Scala".

In the context of this thesis, Sebastian designed, in collaboration with myself, a novel type system extension for the Scala programming language that aims to make concurrent programming safer when using the async/finish model (a generalization of the fork/join model). For this type system, Sebastian has completed proofs of (a) type soundness, (b) data-race freedom, (c) deadlock freedom, and (d) determinism. While some of these properties have been established for previous languages, Sebastian's work is novel, because the type system enables reusing existing class definitions without additional annotations in a variety of contexts, in contrast to prior work.

Due to the outstanding quality of his results, I suggested to Sebastian to submit a paper to a leading international conference. However, in order to make this feasible, **I recommend prolonging Sebastian's MSc thesis until May 15th, 2024, instead of the original end date of April 15th, 2024.** This prolongation would enable a high-quality paper submission to ECOOP 2024, the 38th European Conference on Object-Oriented Programming (deadline: April 17th). I hope you consider the prolongation request favourably.

Yours sincerely,

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