

# Software Component Technology Group

## Semester Thesis

### A Universe Type Checker using JSR308

Phokham Nonava

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**Introduction** JSR 308 [2] is extending the possible locations of annotations in Java source code. Annotations will be possible on all occurrences of types and implementing realistic type systems is becoming an option. A reference implementation and compiler-plugin framework for JSR 308 is now available [3].

**The goal of this semester thesis** is the development of a JSR 308 compiler-plugin that checks the rules of Generic Universe Types [1].

**The main parts** of this project are:

1. Understanding JSR 308 and the possibilities to use the framework for a Generic Universe Types checker.
2. Implementing such a compiler plugin.
3. Ensuring its correct behavior using a number of test cases.

Possible extensions include the implementation of a bytecode verifier that checks whether the Universe annotations are correctly used in Java bytecode or the support of runtime checks.

## Literatur

- [1] W. Dietl, S. Drossopoulou, and P. Müller. Generic Universe Types. In E. Ernst, editor, *European Conference on Object-Oriented Programming (ECOOP)*, volume 4609 of *Lecture Notes in Computer Science*, pages 28–53. Springer-Verlag, 2007.
- [2] Michael D. Ernst. Jsr 308: Annotations on java types. <http://jcp.org/en/jsr/detail?id=308>, November 2007.
- [3] MIT. Jsr 308: Annotations on java types. <http://groups.csail.mit.edu/pag/jsr308>.