

# TVLA: A System for Generating Abstract Interpreters

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## Summary

The course will present TVLA (Three-Valued-Logic Analyzer). TVLA is a "YACC"-like framework for automatically constructing abstract interpreters from an operational semantics. The operational semantics is specified as a generic transition system based on first order logic. TVLA has been implemented in Java and was successfully used to prove interesting properties of (concurrent) Java programs manipulating linked dynamically allocated data structures and to verify the partial correctness of several sorting programs.

**Keywords:** abstract interpretation, alias analysis, constraint solving, destructive updating, pointer analysis, shape analysis, static analysis, 3-valued logic

## References

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