Verified compilation: towards zero-defect software

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Résumé

A formally verified compiler ensures that compilation does not introduce any bugs in programs. In the CompCert C compiler, this correctness property requires reasoning about realistic languages by using a semantic framework. This talk explains how this framework has been effectively used to turn CompCert from a prototype in a lab into a real-world compiler. More generally, this approach opens the way to the verification of software tools involved in the production and verification of software.

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