

# Advances in Proving Program Termination and Liveness

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**Abstract.** Because the halting problem is undecidable, many have considered the dream of automatically proving termination (and other liveness properties) to be impossible. While not refuting Turing's original result of undecidability, recent research now makes this dream a practical reality. I will describe this recent work and its application to industrial software and models of biological systems. I will also describe recent adaptations of these new technologies to the problem of proving temporal properties in logics such as CTL and LTL.