



English Is the New Programming Language (And We Are the New Bottleneck)

Prof Willem Visser (Stellenbosch University & Amazon Web Services)

Monday, 19 October 2026 | 16h00–17h00 SAST

HOW TO ATTEND:

In person (main venue):

- Road House Cinema
(Neelsie)
Stellenbosch University

Watch at satellite venues:

- MITP Boardroom P215,
2nd Floor Physics Building
University of the Witwatersrand
- Seminar Room K310
Physics Building G5
North-West University

Online (live stream)

--- Please note, a recording of the lecture will be published on the NITheCS YouTube channel following the event ---

ABSTRACT

Something remarkable happened in the space of about a year. Work that took weeks – building working prototypes, analysing datasets, or translating ideas into something a computer will actually do – now takes minutes. Generative AI and AI coding agents have quietly made English the most widely used programming language in the world, allowing people who would never call themselves programmers to generate complex outputs.

So why does it feel harder rather than easier?

Because only half of the work got cheaper. Producing things is now nearly free; deciding whether those things are any good is not. Generative AI scaled our ability to generate code far faster than it scaled anyone's ability to verify it, and the gap between the two is on us. We have become the bottleneck – not because we are slow, but because judgment is not automated.

This talk explores what this paradigm shift demands of the next generation of computer scientists. The focus has moved from knowing how to make something to specifying what you want and determining whether you got it. Drawing on current industry challenges and advanced applications of machine learning and automated reasoning at AWS, the talk will examine how to bridge this verification gap. It considers why relying on automated generation can feel uncomfortable, as verification is the capability we acquired by doing the work ourselves, and how rigorous programme analysis can help us scale human judgment in an AI-driven world.

BIOGRAPHY

Willem Visser is a Professor of Computer Science at Stellenbosch University and a Senior Principal Applied Scientist at Amazon Web Services, where he leads a team specialising in AI and automated reasoning. He previously spent eight years at NASA's Ames Research Center and holds a PhD in Computer Science from the University of Manchester.

A world leader in software engineering, Prof Visser is known for his contributions to Java PathFinder and Symbolic PathFinder. His research focuses on software testing, programme analysis, model checking and automated reasoning. He is an NRF A-rated researcher, ACM Distinguished Member and ISSTA Retrospective Impact Paper Award recipient, and serves as General Chair of ISSTA 2026.



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