UNIVERSITY OF TWENTE.

FORMAL METHODS AND TOOLS

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FORMAL METHODS AND TOOLS





UNIVERSITY OF TWENTE.

FMT IN 2018



APPLICATION AREAS





AFFINITY WITH EDUCATION

EMERGING RESEARCH TRENDS

FORMAL METHODS AND TOOLS

MISSION

To study and develop methods for the design and analysis of software systems. Our methods are firmly rooted in math, and are usable for many different domains. This research requires a unique combination of skills: translating domain-specific concepts into formal descriptions, and developing prototype tooling to validate our methods.

RESEARCH OUTPU1



AGENDA SETTING

EUNDING



UNIVERSITY OF TWENTE.

OUR MISSION



	We develop mathematical methods, high-performance data structures and algorithms, and suitable programming languages for the design of reliable software - and data - intensive control systems.
Abstractions	We focus on modelling, synthesis, analysis, prediction and maintenance of their functional, structural and quantitative aspects.
Properties	We aim to understand safety, reliability, performance, energy usage of complex systems and the risks and costs associated to their architecture, design, operation and maintenance.
Techniques	Our mission builds on extensive experience in concurrency theory, static analysis, theorem proving, language design, model checking and term/graph rewriting.

FUTURE TRENDS IN 2018...



Automated support for software verification





Verified, Efficient, and Secure Parallel Algorithms

Risk analysis and management





Software maintainability



Smarter code completions

Protocols for medical treatments







Effects of language extensions

AND MORE



Quantitative analysis of systems



Reliable reinforcement learning



Testing



Efficient algorithms for solving verification problems



Causal analysis





https://www.utwente.nl/en/eemcs/fmt/

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