



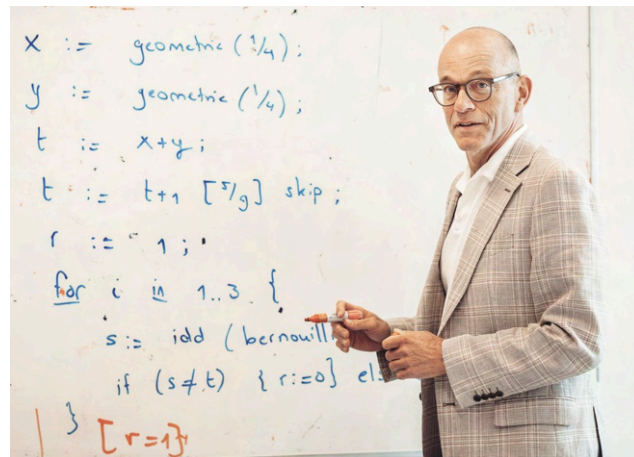
# Colloquium on Principles of Verification: Cycling the Probabilistic Landscape

MOVES Alumni Meeting; November 8, 2024



# 33 Years at i2 and Beyond

Thomas Noll (MOVES Alumni Meeting; November 8, 2024)



- Lehrstuhl Informatik 2 (i2) founded by Klaus Indermark on December 23, 1975
- “Programming Languages and Program Analysis”
- Taken over by Joost-Pieter on October 1, 2005
- “Software Modeling and Verification – MOVES”



### Einladung

Zum Festkolloquium anlässlich der

### Emeritierung von Prof. Dr. Klaus Indermark

lädt die Fachgruppe Informatik der RWTH Aachen herzlich ein.

**Ort:** Hörsaal AH 5, Ahornstraße 55

**Datum:** Freitag, 4. November 2005

**Programm:** 15:00 *Begrüßung*  
Prof. Dr. Wolfgang Thomas  
Dekan der Fakultät für Mathematik, Informatik  
und Naturwissenschaften, RWTH Aachen  
Prof. Dr. Manfred Nagl  
Sprecher der Fachgruppe Informatik, RWTH Aachen

15:30 *Wieso LISPeln Programmierer?*  
Prof. Dr. Herbert Klaeren  
Wilhelm-Schickard-Institut, Universität Tübingen

16:15 *Kaffeepause*

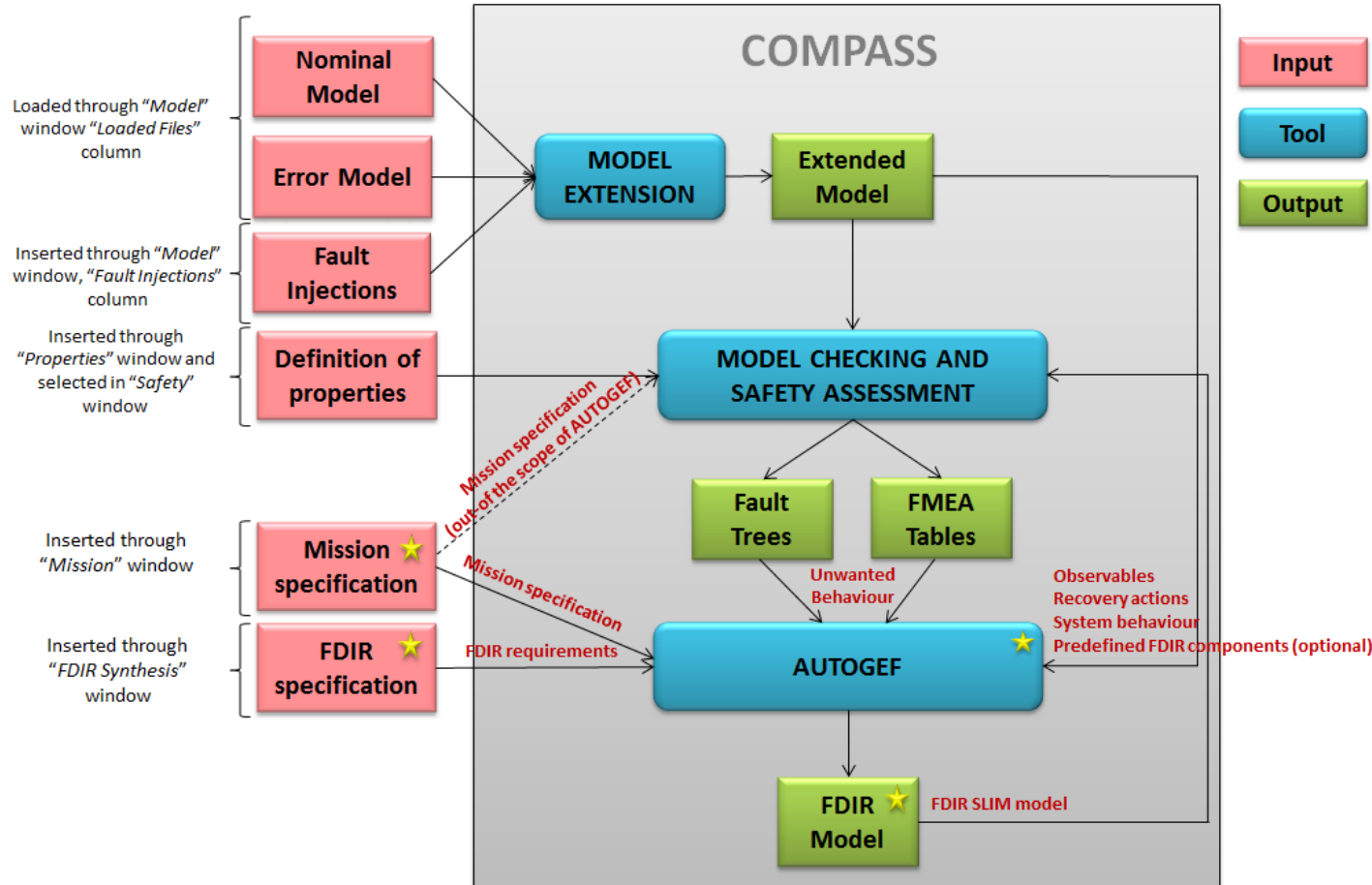
16:45 *Automatische Verifikation stochastischer Systeme*  
Prof. Dr. Ir. Joost-Pieter Katoen  
Lehrstuhl für Informatik 2, RWTH Aachen





# This Is the Place [By the Way, 2002]

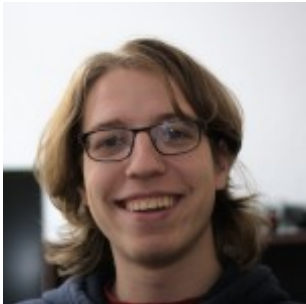






Storm

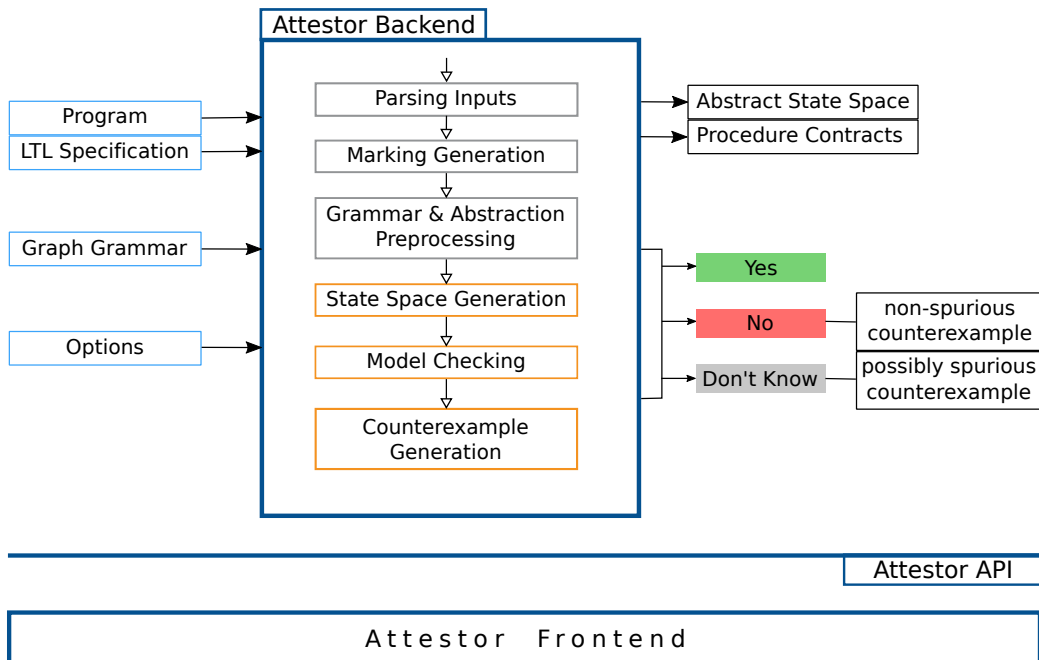
www.stormchecker.org

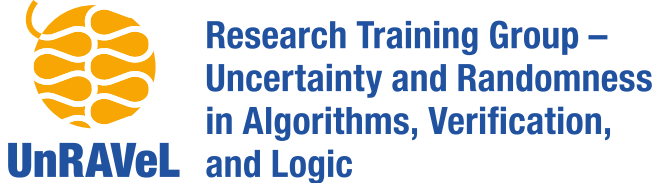


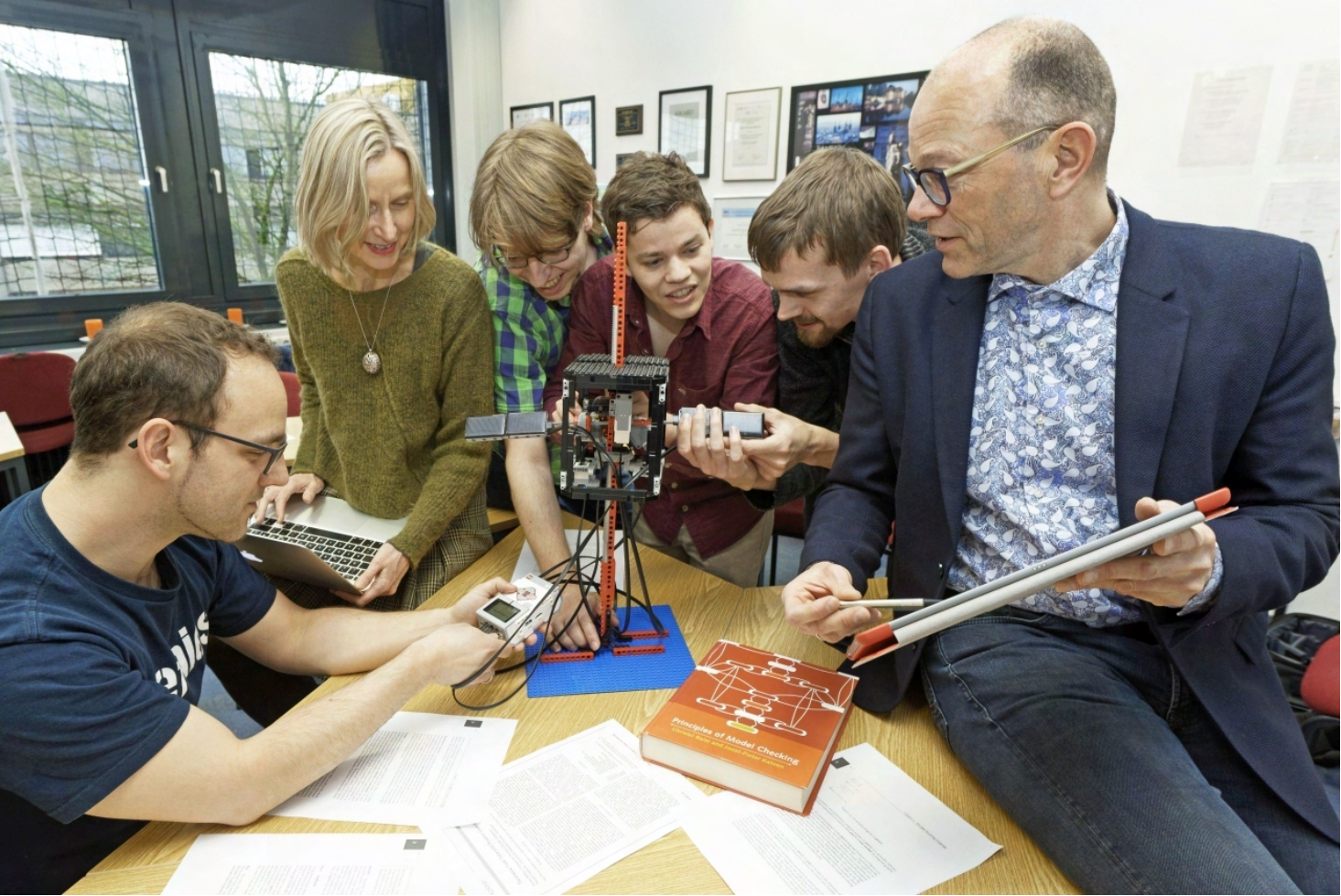


# The Shape I'm Takin' [Return of the Dream Canteen, 2022]

# Attestor Framework (2016)







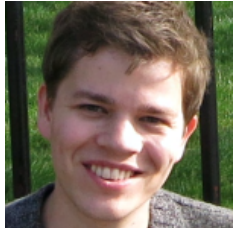


# A Deductive Verifier for Probabilistic Programs

expected run-times   partial correctness   k-induction  
positive almost-sure termination   expected resource consumption  
martingales   amortized analysis   almost-sure termination  
conditional expected values   total correctness  
optional stopping theorem   Park induction   probabilistic sensitivity

Quantitative Intermediate Verification Language (HeyVL)

VC Generator → Real-valued Logic → SMT Solver



# Aeroplane [One Hot Minute, 1995]

# MISSION (MSCA RISE Program, 2021)



Alfred Renyi

*“A mathematician is a machine for turning coffee into theorems.”*

