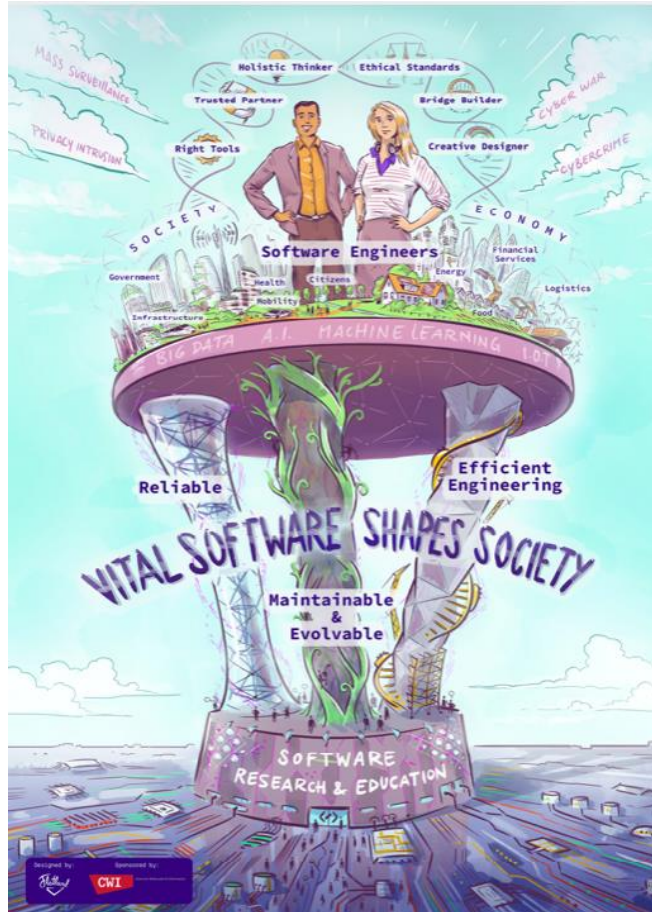# Research Projects in Software Science

Frits Vaandrager

Software Science Group

Institute for Computing and Information Sciences

# Software Science



- Ensuring that software is correct and secure is both a major scientific challenge and an enterprise with enormous societal relevance.

- Modelling is an essential part of many scientific and engineering disciplines.

- It is important (and inspiring!) to cover the full spectrum from theory to applications in a single group.

# Bachelor Thesis in Software Science

Emphasis can be on programming, theory, algorithm design, literature study, empirical/experimental work, building prototypes, industrial applications,..

You can do your bachelor thesis within the group, at a company, or at some other university of research institute AoE.

How to find a good project:

1. Select a topic from our wiki http://www.sws.cs.ru.nl/Teaching (more than 100 project ideas listed!!!)
2. Or propose your own topic
3. Discuss your ideas with staff members

# Software Analysis / Dependability
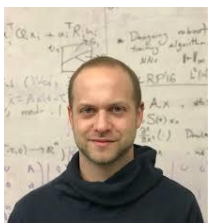


Frits Vaandrager



Jan Tretmans



Marielle Stoelinga



Nils Jansen



Sebastian Junges

Model learning

Testing

Verified and dependable AI and machine learning

Algorithms for system dependability

# Program Verification



Robbert Krebbers



Freek Wiedijk

Program verification with types and logic

# Software Technology

HPC, compilers, array programming

Bodo Scholz

Task oriented / functional programming

Pieter Koopman      Peter Achten

Programming education

Sjaak Smetsers

# Software Engineering


Mairieli Wessel

Software development bots


Daniel Strueber

Software product lines


Bin Lin

Software refactoring

# Theory of Software



Herman Geuvers

Type theory and lambda calculus



Jurriaan Rot

Automata theory



Cynthia Kop

Term rewriting

# Our Industrial Partners

- ASML
- Philips Healthcare
- Canon Production Printing
- Nexperia
- Alfalval
- Rolsch
- TomTom
- Thermo Fischer
- Vanderlande
- SpronQ

- ADLink
- AKKA
- Axini
- ICT
- InTraffic
- Nederlandse Spoorwegen
- Malvern Panalytical
- Sogeti
- Thales
- TOPIC Embedded Systems
- TOP Software Technology
- …

# Our Academic Network



We will be happy to help you to arrange an internship at any place on earth where serious software science research is being carried out!