



GS-IMTR

Graduate School
Intelligent Methods for Test and Reliability

MSc Seminar

“Intelligent Methods for Test and Reliability” Summer semester 2022

Examiner	Prof. Dirk Pflüger
Institute	Institute for Parallel and Distributed Systems (IPVS)
Supervisors	Members of the Graduate School “Intelligent Methods for Test and Reliability” (GS-IMTR): Maik Betka, Peter Domanski, Nourhan Elhamawy, Athanasios Gatzastros, Paul Genssler, Sebastian Hasler, Hanieh Jafarzadeh, Florian Klemme, Andrés Lalama, Yiwen Liao, Natalia Lyliana, Zahra Najafi Haghi, Denis Schwachhofer, Victor van Santen
Contact	Peter Domanski (peter.domanski@ipvs.uni-stuttgart.de)
First meeting	Monday, April 11, 1pm-2pm (tentative), https://unistuttgart.webex.com/meet/peter.domanski

Who should attend?

This seminar is targeted to InfoTech students. If space is available, we welcome all other students as well.

Why take this seminar?

Today’s economy and even entire societies rest upon information technology. All servers, smartphones, and the billions of embedded devices depend on their underlying hardware. Only with careful design and thorough testing is this hardware reliable enough to enable today’s societies. Yet the demand for more capable chips is exploding while the manufacturing technology itself reaches new levels of complexity. Traditional design and test methods are insufficient for dealing with this unprecedented increase in demand and complexity. Thus, it is now more important than ever to develop and deploy intelligent methods for test and reliability.

In this seminar, we explore recent breakthroughs in the areas of machine learning, artificial intelligence, data analytics, security, and many others. Such emerging techniques enable novel intelligent methods for chip design, test, diagnosis, and reliability to reduce cost and time to market. However, to benefit from those breakthroughs, expertise in that area and domain knowledge of chip testing has to be combined. This seminar takes a wider look across multiple areas of research to enable tomorrow’s designers and engineers to combine expertise with domain knowledge. Only then will they be in a position to create reliable technology enabling tomorrow’s society.

What we expect?

- Motivation to learn about new topics,
- Interest in machine learning, data analytics and/or hardware design and test,
- Sufficient English skills to understand scientific texts, to discuss, and to write a report.

Structure and process

- Preliminary meeting: introduction and topic assignment (based on recent scientific publications),
- Preparation of a report according to standard scientific procedures,
- Rehearsal of the presentation with a supervisor,
- Presentation during the seminar (regular semester dates; if requested and agreement on dates: block seminar possible),
- Active contribution to the discussions after the presentations is required.

The seminar is offered in English.