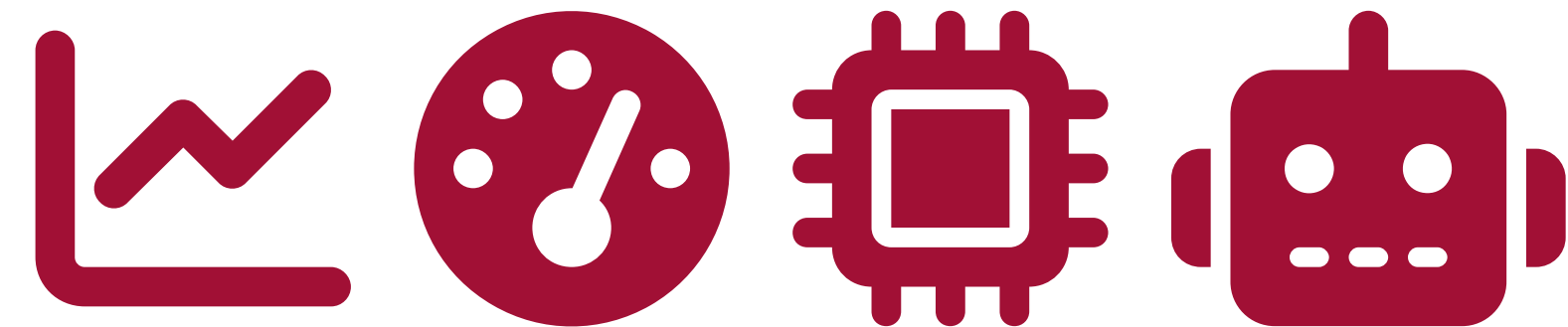


Seminar

Trends in Model Checking & Learning in Verification

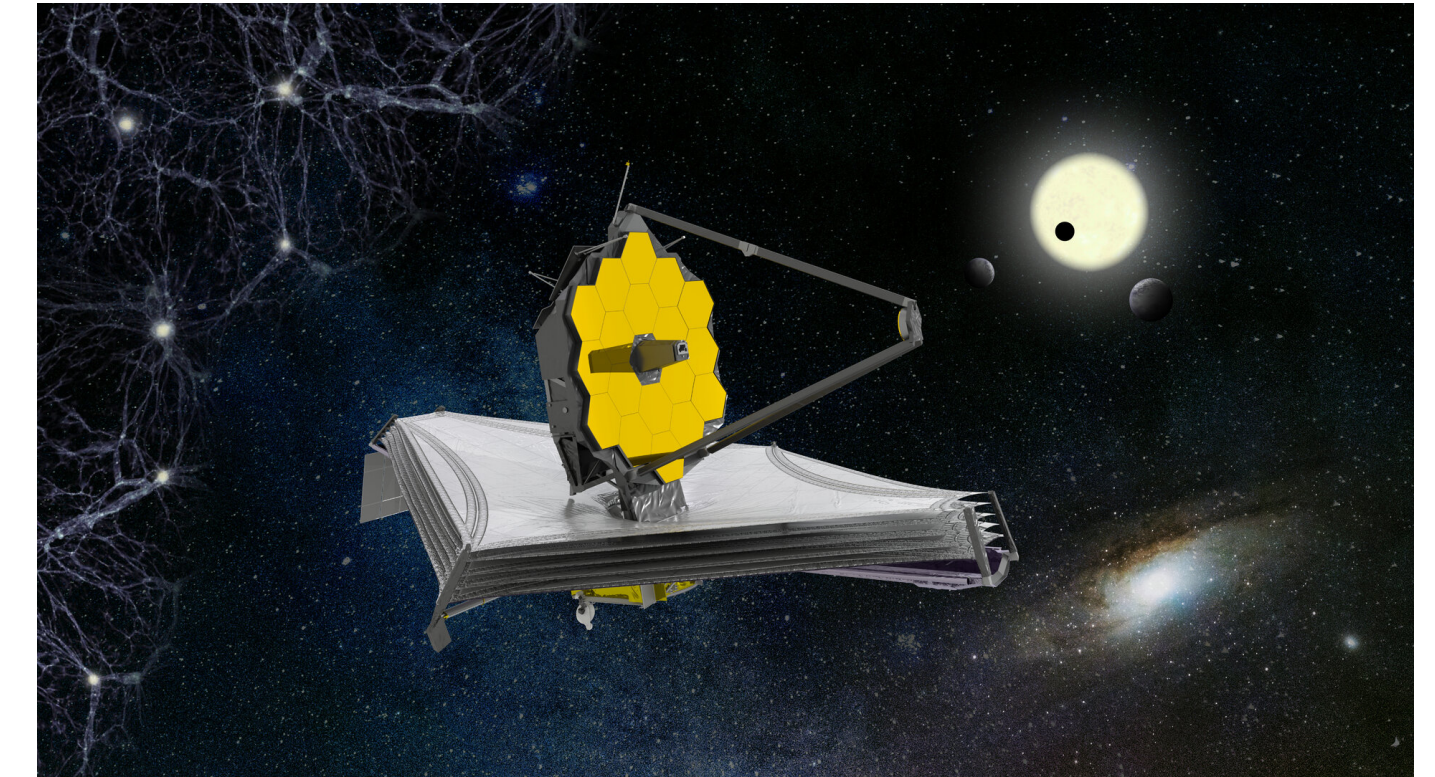
SS26 – Introduction



Xaver Fink, Thomas Noll, Tim Quatmann

<https://moves.rwth-aachen.de/teaching/ss-26/mc-seminar/>

<https://moves.rwth-aachen.de/teaching/ss-26/live/>

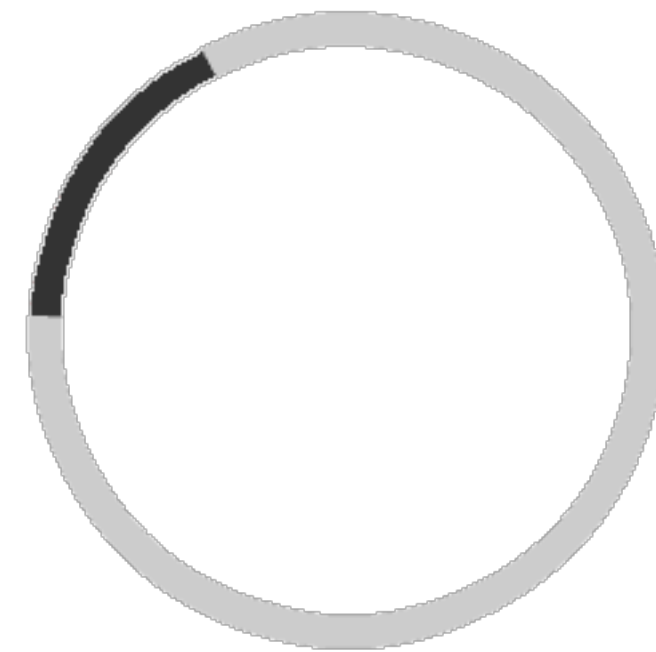
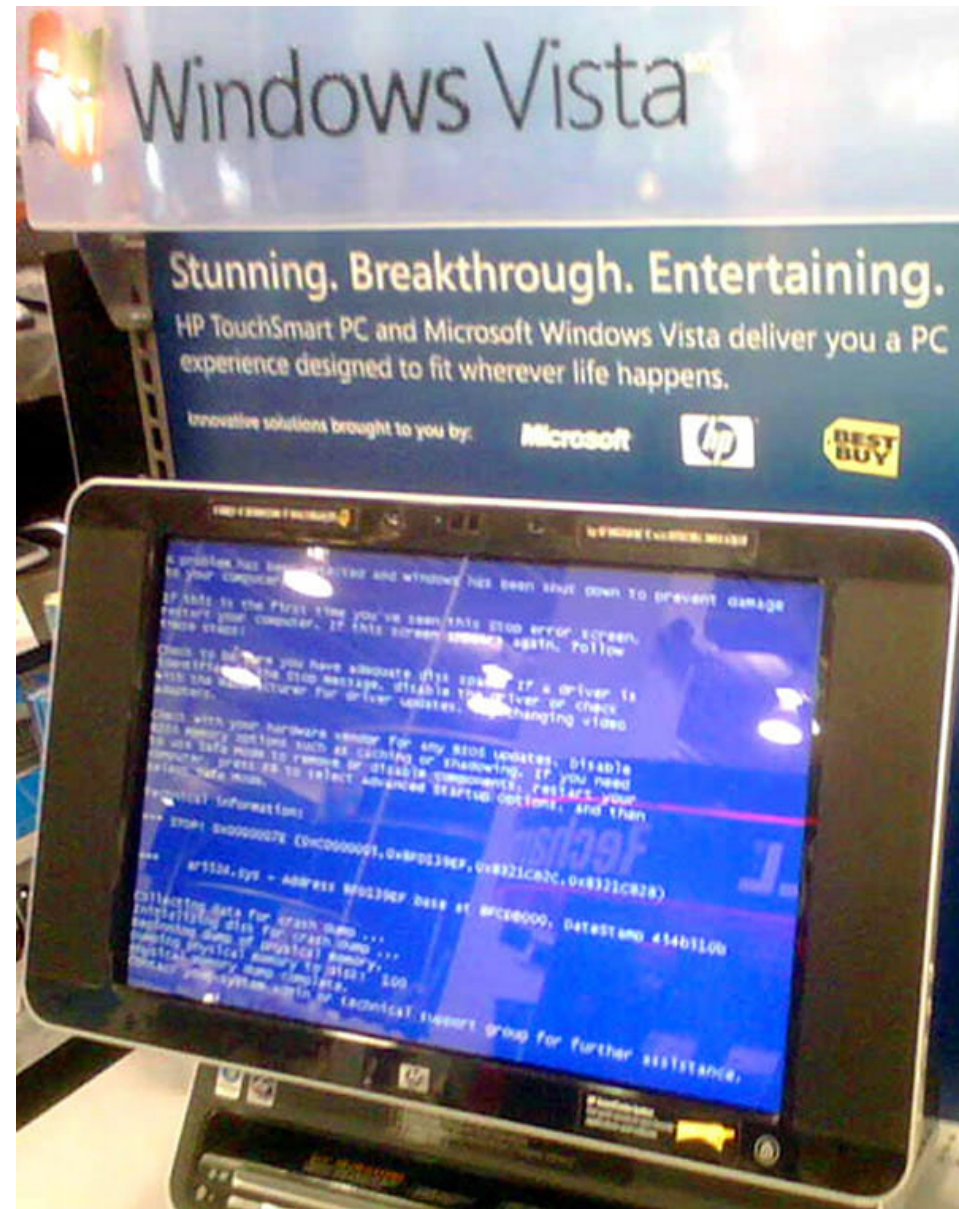


Software Systems are everywhere!





Software Failures are everywhere!

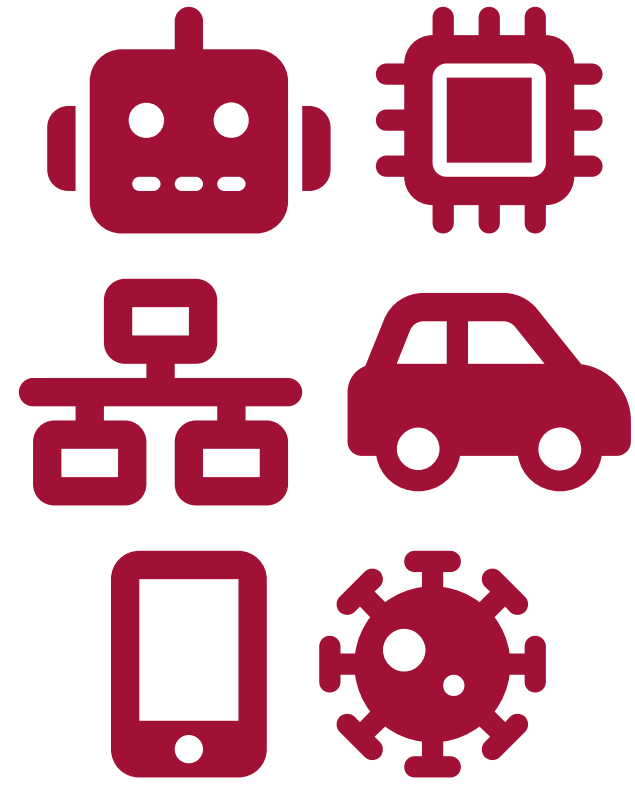


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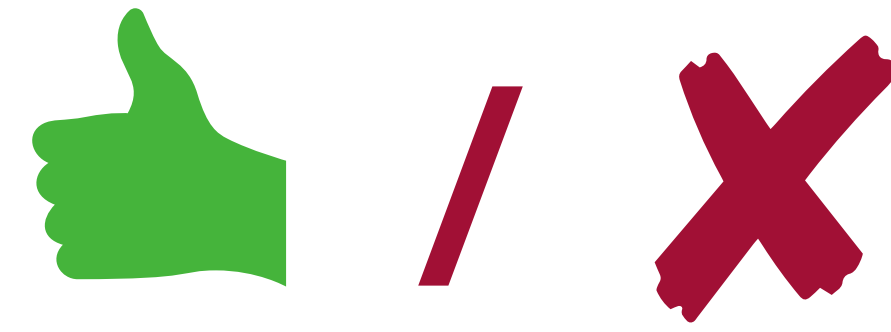


How to prevent such failures?

System Model



System Property



+ diagnostics

Objectives of this Seminar

- **Independent understanding** of a scientific research article
- Describe the **problem(s)** considered in the article and the necessary **background**
- Explain relevant **research results** using an **adequate level of detail**
- Acquire, read, and understand **related literature**

Write a **concise report** and give an oral **presentation** covering the above points

- **Peer-review** of other reports

Requirements on Report (1)

- Independent writing of a concise report of **2 pages**
 - Must follow the LaTeX template provided on the website
 - Must be understandable by everyone in this room
- **First milestone**: detailed **outline** & **20% of technical content written**
 - Get a deep understanding of your topic — we will ask you about it!
 - Provide overview of structure (section headers, main definitions/theorems)
- Correct **spelling** and **grammar** is required; use German or English
 - We abort correction if there are too many errors
- Wise use of **generative AI**
 - e.g. just for grammar correction

Requirements on Report (2)

- **Second milestone: 100% done**
- **Content must not exceed 2 pages** — using the provided LaTeX template
 - Every sentence is and must be important
- **Complete** and **correctly cited** set of references to all consulted literature
- Additional content can be put into an **appendix**. (optional)
- References and appendices do not count into the page limit
- **Third milestone:** submission of **final** (camera-ready) version
 - Incorporate reviewer feedback

Peer-Reviewing

- You will review **three** reports of your peer-students
 - Reviewers do not have to consider the appendix.
- **Main criteria:**
 - understandability,
 - technical depth,
 - and clarity of writing
- Reviewers provide **constructive** feedback
- Reviewing is **anonymised** (double-blind) and does not affect **report grading**
- ...but the feedback should be taken into account carefully

Requirements on Presentation

- **Total duration:** 30 minutes (20 minutes presentation time + 10 minutes for Q&A)
 - Finish in time – Overtime is bad
- Focus your talk on the **audience**, abstract away from details as necessary
- Descriptive slides (LaTeX template on website, can also use other software)
 - ≤ 15 lines of text per slide, use colors, number your slides, correct spelling
- Prepare for expected **questions**, e.g., with backup slides

The presentation and Q&A make up at least half of the grade!

Soft Requirements and Hints

- Get an understanding of the **practical** and **theoretical(!)** aspects of the article
 - **Reminder:** this is a seminar in theoretical computer science
- Find the right **level of detail**
 - Your report and talk should be **self-contained** and **understandable** by people not familiar with the original article
 - Focus on **core ideas**, omit too specific details (e.g., related work or optimisations)
 - Provide **examples**
- Discuss contents / ideas / problems with your **supervisor**
 - Contact them on time, prepare the meetings
- **Take your time**
 - Seminar yields 4 credit points
 - Officially, this translates to around $4 * 30 = 120$ hours of work
 - Do not expect to write the report / prepare the talk in a single day ...

Important Dates

22.04.2026, 10:30: Topic preferences due (**Wednesday**); see last slide

11.05.2026: Detailed outline and 20% of content due

01.06.2026: Full report due

15.06.2026: Reviews due

06.07.2026: Presentation slides & camera-ready version due

16./17.07.2026: Seminar talks (precise date will be announced soon)

Withdrawal

- You have **one week (!)** to refrain from participating in this seminar
- Later cancellation (by you or by us) causes a not passed for this seminar and reduces your (three) tries by one.

**Missing a deadline causes immediate exclusion from the seminar
Please notify us if you decide to quit**

Topics

Selecting your Topic

- **Enter the poll** in the link you receive via email after this event
 - <https://terminplaner6.dfn.de/.....>
 - Do this until **Wednesday 22.04.2026, 10:30**
- We do our best to find a *good* topic-student assignment
 - It helps when you indicate multiple topics
- Topic assignment will be announced on **Thursday**

We wish you success and look forward to an enjoyable and high-quality seminar!