Proposed Agenda: Dagstuhl Seminar "Fusing Causality, Reasoning, and Learning for Fault Management and Diagnosis"

Monday, Jan. 15th:

- 07:30 – 08:45 Breakfast
- 9:00 - 9:30 Welcome
    - Agenda for the meeting
    - Organisational Aspects
- 09:30 – 10:30 Introductions (1)
- 10:30 – 10:45 Coffee Break
- 10:45 – 12:00 Introductions (2)
- 12:15 – 13:00 Lunch
- 13:00 – 15:30 Tutorials (30min+15min)
    - Basics of Model-based Diagnosis (Ingo Pill)
    - Bridge Approach (Louise Trave-Massuyes)
- 15:00 – 15:30 Coffee Break
- 15:30 – 17:00 Tutorials (30min+15min)
    - Diagnosing CPS (Oliver Niggemann)
    - Monitoring and Verification (Alessandro Cimatti)
- 17:00 – 18:00 Open Discussion
- 18:00 Dinner

Tuesday, Jan. 16th:

- 07:30 – 08:45 Breakfast
- 09:00 – 10:00 Keynote Johan De Kleer
- 10:00 – 10:15 Coffee Break
- 10:15 – 12:15 Panel Discussion "Current and Future Challenges in Resilient System Design"
    - Moderator: Ingo Pill
    - Participants: Gautam Biswas, Alessandro Cimatti, Ken Forbus, Johan de Kleer, Oliver Niggemann, and Franz Wotawa

- 12:15 – 13:30 Lunch
- 14:00 Hiking
- 18:00 Dinner

Wednesday, Jan. 17th

- 07:30 – 08:45 Breakfast
- 09:00 – 10:00 Keynote Ken Forbus
- 10:00 – 10:30 Coffee Break
- 10:30 – 12:15 Highlight Talks (15mins + 5min)
    - Fault detection, diagnosis and mitigation for space propulsion systems - Günther Waxenegger-Wilfing
    - Diagnosability of Fair Transition Systems – Marco Bozzano
    - Quality Assurance Methodologies for Resilient (Model-based) Systems - Franz Wotawa
- 12:15 – 13:30 Lunch
- 13:30 – 15:00 Highlight Talks (15mins + 5min)
    - AI for predictive maintenance: domain adaptation, MLOps, and Edge computing. A case study. - Marco Cristoforetti
    - Learning what to Monitor: Pairing Monitoring and Learning - Angelo Montanari
    - Hybrid model learning for system health monitoring under uncertainty – Pauline Ribot
- 15:00 – 15:30 Brainstorming Breakout Sessions
- 15:30 – 16:00 Coffee Break / Breakout Sessions
- 16:00 – 17:30 Breakout Sessions
- 17:30 – 18:00 Presenting Results Briefly
- 18:00 Dinner

Thursday, Jan. 18th

- 07:30 – 08:45 Breakfast
- 9:00 – 10:00 Keynote Gautam Biswas “Reinforcement Learning for Control of Cyber Physical Systems."
- 10:15 – 10:45 Coffee Break
- 10:50 – 11:45 Highlight Talks (15mins + 5min)

    - Tree-based diagnosis enhanced with meta knowledge – Elodie Chanthery
    - Explainable deep learning for fault isolation – Gregory Provan
- 12:00 Group Picture
- 12:15 – 13:30 Lunch
- 13:30 – 14:30 Highlight Talks (15mins + 5min)
    - Data-driven diagnosis from an FDI practitioner's perspective – Daniel Jung
    - Root Cause Analysis via Anomaly Detection and Causal Graphs – Josephine Rehak
- 14:30 – 15:00 Adjusting Breakout Sessions
- 15:00 – 15.30 Breakout Sessions
- 15:30 – 16:00 Coffee Break / Breakout Sessions
- 16:00 – 17:00 Breakout Sessions
- 17:00 – 18:00 Discussion of results
- 18:00 Dinner

Friday, Jan. 19th

- 07:30 – 08:45 Breakfast and Vacate Rooms
- 09:30 – 10:30 Highlight Talks (15mins + 5min)
    - Gerald Steinbauer-Wagner
    - Manfred Mücke
- 10:30 – 11:00 Coffee Break
- 11:00 – 11:15 Farewell
- 12:15 Lunch and Departure