33rd International Workshop on
Principles of Diagnosis
DX 2022

September 14th - 16th 2022, Toulouse, France

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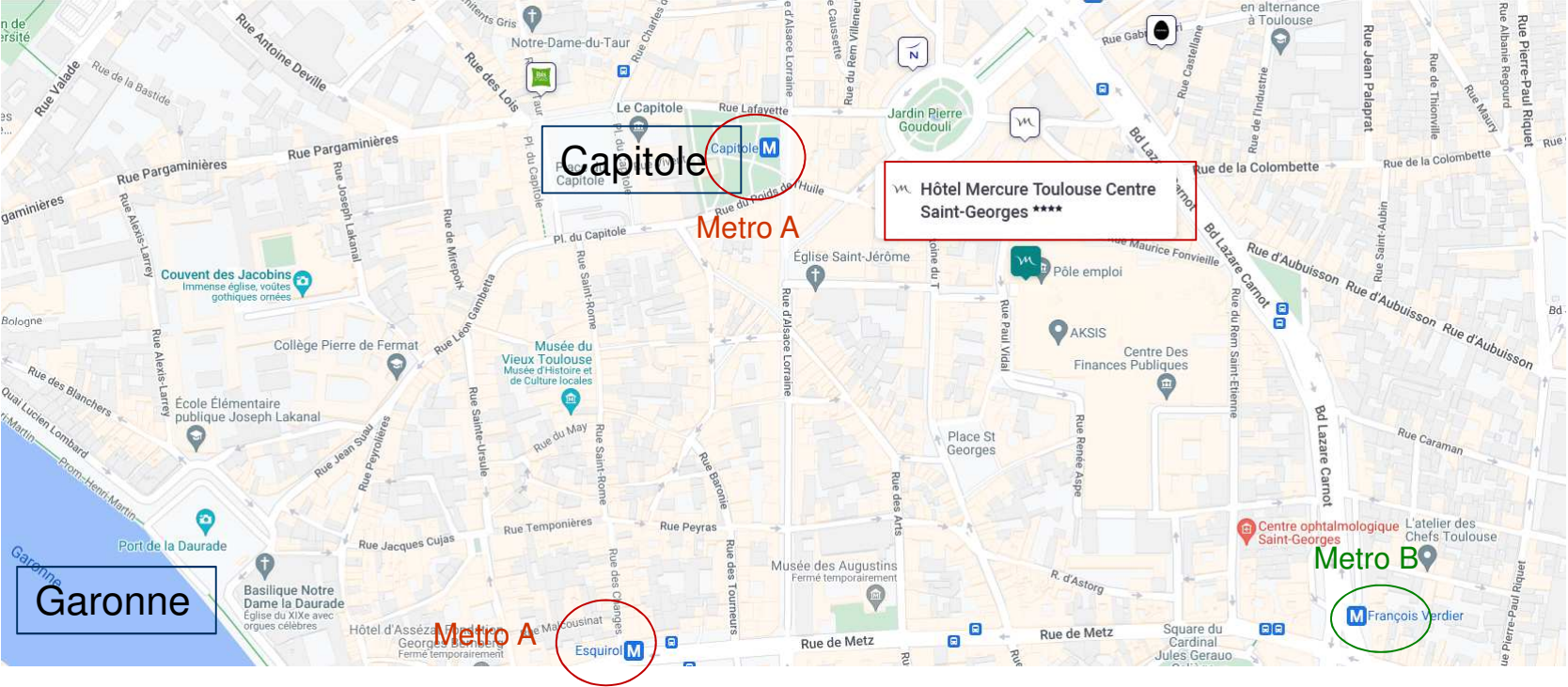
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Welcome at DX22!

Mercure HOTELS

TOULOUSE CENTRE SAINT-GEORGES

Welcome at DX22!

Program

Tue. Sept, 13	Wed. Sept, 14	Thu. Sept, 15	Fri. Sept, 16
	9:00-9:15 : opening words **9:15 – 10:15 : Keynote G. Steinbauer**	**9:00-10:00 : Session 3**	**9:00 – 10:00 : Keynote J. Marques-Silva**
	10:15-10:45 : Coffee break	10:00-10:30 : Coffee break	10:00-10:30 Coffee break
	10:45-12:15 : Session 1	**10:30-12:00 : Session 4**	**10:00-12:00 : Session 5 + Closing words**
	12:15-14:00 : Lunch	12:00-14:00 : Lunch	12:15-14:00 Lunch
	14:00-15:30 : Session 2	14:30 : Departure from the Mercure hotel	
	15:30-16:00 : Coffee break		
18:00 : DX Welcome Reception	**16:00-17:30 : Poster Session**	16:00-17:30 : Aéroscopia Museum 20:00-23:30 : Gala dinner at the Occitania Boat	

Dependable Robots through Model-Based Techniques

by Gerald Steinbauer-Wagner

Keynote 1 : September 14th 2022, 9:15-10:15
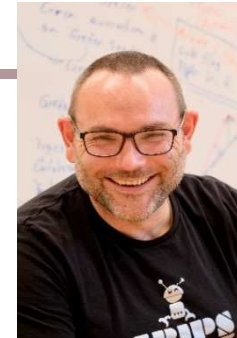
Gerald Steinbauer-Wagner received a M.Sc in Computer Engineering and a PhD in Computer Science in 2001 and 2006 from Graz University of Technology. He is an associate professor at the Institute for Software Technology (IST) at the Graz University of Technology and leads the research group on Autonomous Intelligent Systems. He works on robustness and dependability of autonomous mobile robots. His research interests include autonomous mobile robots, sensor fusion, world modeling, robust robot control, cognitive robotics, search and rescue robots, knowledge representation, reasoning, model-based diagnosis, planning and RoboCup. In particular he is interested to integrate AI techniques into a complete robot system rather than focusing on individual parts in isolation. He published several dozens papers in journals, conferences and workshops. He organized a number of workshops and other scientific events and is very active in the RoboCup community.

Abstract

Although, there are tons of impressive videos out there surprisingly enough autonomous robots frequently fail in performing moderate complex every day tasks in every day environments. Reasons are manifold and origin mainly from the perception-decision-action cycle interacting with the environment. Having an insight for the root causes is valuable for the robot itself to act dependable. But it is also important for the developer as intelligent robots are complex constructs with often a lack of introspection. The DX community focuses their effort to run-time verification (e.g. monitoring and diagnosis) in order to improve the dependability of such complex machines. In this talk we like to focus on the development/life cycle of an autonomous robot from the design over the implementation to the deployment. We like to emphasize that in all of these stages can benefit from the application of model-based approaches to improve dependability. We will motivate this holistic view and will present techniques developed to tackle the different stages of the life cycle of robot in different domains such as logistics or production.

Logic-Based Explainability in Machine Learning

by Joao Marques-Silva

Keynote 2 – September 16th 2022, 9:00-10:00

Joao Marques-Silva is a CNRS Research Director (Directeur de Recherche), being affiliated with IRIT in Toulouse, France. He is also one of the Research Chairs of the Artificial and Natural Intelligence Toulouse Institute (ANITI). Before joining CNRS, IRIT and ANITI, Joao Marques-Silva was affiliated with the University of Lisbon in Portugal, the University College Dublin in Ireland, and the University of Southampton in the United Kingdom. Dr. Marques-Silva is a Fellow of the IEEE, and he was a recipient of the 2009 CAV Award for fundamental contributions to the development of high-performance Boolean satisfiability solvers.

Abstract:
The forecast applications of machine learning (ML) in high-risk and safety-critical applications hinge on systems that are robust in their operation and that can be trusted. This talk gives a broad overview of ongoing efforts in applying logic-enabled automated reasoning tools for explaining black-box ML models. The talk details the computation of rigorous explanations for the predictions black-box models, and illustrates how these serve to assess the quality of widely used heuristic explanation approaches. The talk also highlights the connections between logic-based explainability and model-based diagnosis. Finally, the talk briefly overviews a number of emerging topics of research in formal explainability.

Poster Session

At the beginning of the poster session, each speaker will be invited to present the topic of his or her work with a single slide to the entire assembly in about 2 minutes.

→ Then the poster session will start!

DX2022 Papers

The papers are available online on HAL :
https://hal.archives-ouvertes.fr/DX2022

Social event: Visit of the Aeroscopia Museum

Aeroscopia Museum,
1 Allée André Turcat,
31700 Blagnac

September 15, 16:00

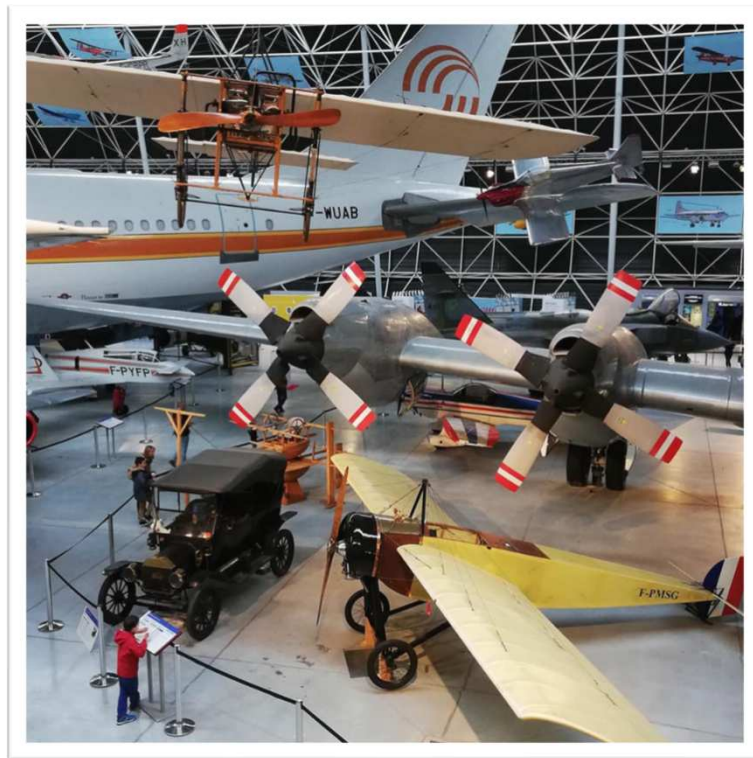**Meeting in front of the Mercure hotel at 2:30 pm**

1. Metro line A direction Basso Cambo, stop at Arènes station.
2. Tramway T1 direction Meet, stop at Beauzelle station.
3. Then 12min on foot.

→ 2 metro tickets in your badge!
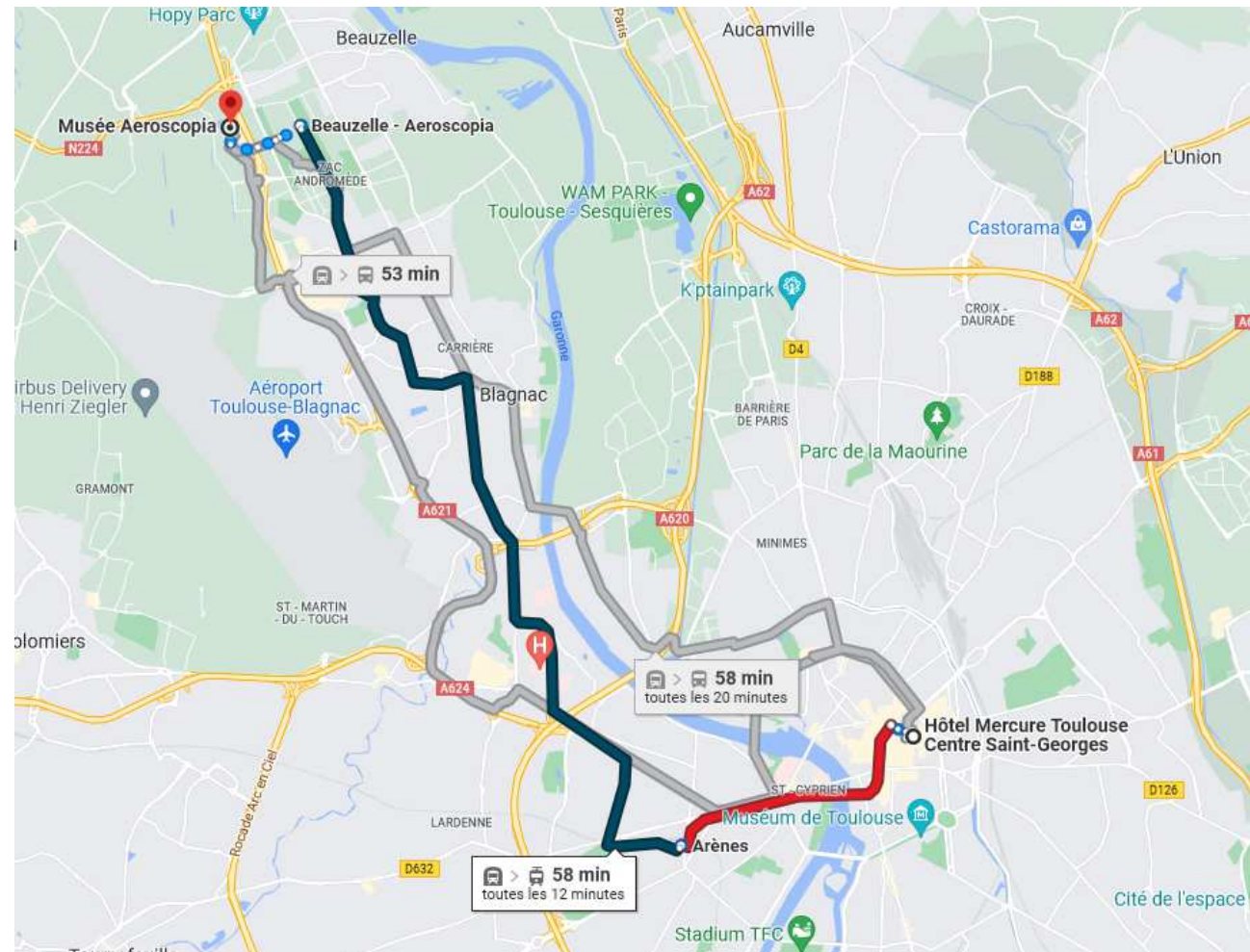
Aeroscopia Museum

A guided tour of the Aeroscopia Museum in English
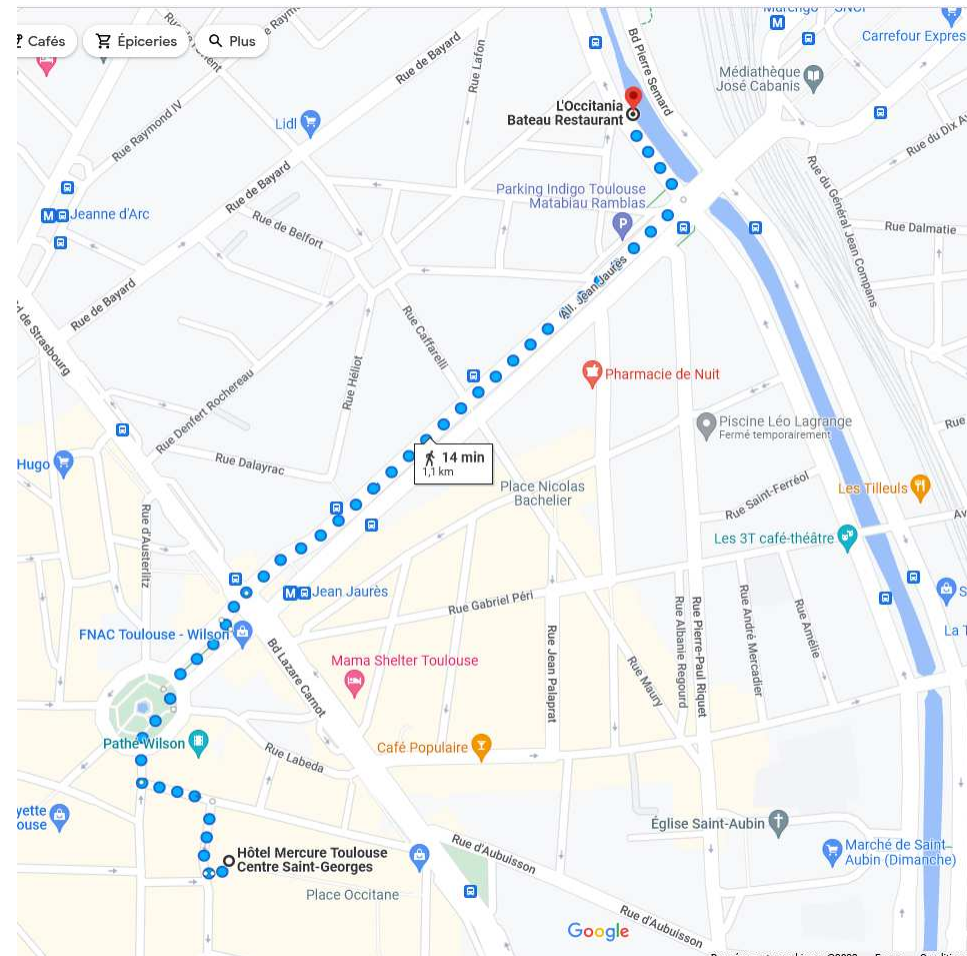
Social event: Gala diner at the Occitania boat

L'Occitania Bateau Restaurant
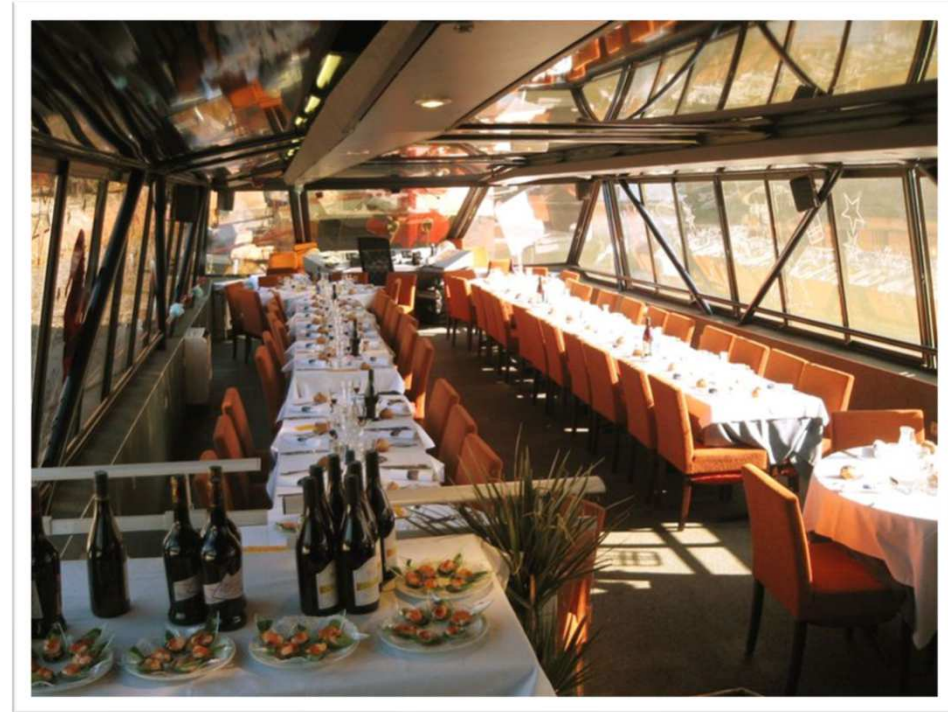4 Boulevard Bonrepos,
31000 Toulouse

September 15, 20:00

Meeting point in front of the boat at 20:00.

- 15min walk from the Mercure hotel
- The boat leaves at 20:15 **(don't be late!!!)**
- Return at 23:30

The Occitania boat

Best paper award

- A selection of 4 papers based on the reviews

- The best paper will be finally chosen on the presentation

- Result at the end of the workshop

More informations

If you have any additional questions, please feel free to ask to one of us or the PhD students team…