

Welcome to Cape-KR!

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Centre for AI Research (CAIR)



If You're Not From Cape Town

Cape Town ranked as second-best city to visit in 2024

Cape Town Mayor Geordin Hill-Lewis said it was exciting to see that people across the globe still rated the Mother City as one of the top global destinations to visit.

Cape Town



If You Are From Cape Town

Cape Town ranks as second-best city to live in worldwide

Posted on 24 January 2024



Cape Town has clinched the second spot in [Time Out's](#) global ranking of the world's best cities to live in for 2024.

The survey, conducted in collaboration with research company Potentia Insight, tapped into the perspectives of locals, diving into aspects such as the quality and affordability of food, culture and nightlife, while also factoring in the overall happiness and beauty of the city.

Time Out also factored in the global perspectives of more than 100 well-travelled Time Out staff writers and editors, who are based all over the world.

So, what makes Cape Town stand out? Table Mountain, stunning beaches and its multicultural vibe are but a few reasons. Places like the District Six Museum and Robben Island highlight the City's rich history, and the colourful homes of the Cape Malay community in Bo-Kaap invite those who are curious to explore further.

Visitors are actively supporting local businesses in townships, adding to the city's vibrant creative scene.

Cape Town's cultural scene received the highest global ranking for its quality – 100% of locals find the city both beautiful and happiness-inducing. In addition, the City is recognised as the most LGBTQ+-friendly city on the African continent.

Cape-KR?

What is Cape-KR?

- Will there be other Cape-KRs?
- If so:
 - how often will they be held?
 - will Cape-KR always be in Cape Town?
 - will Cape-KR always have the same structure?

Cape-KR?


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Come to the BRAON/Cape-KR sessions:

- tomorrow at 09:00
- on Thursday at 10:00

What is Cape-KR 2024?

							
Monday 29 January 2024		Tuesday 30 January 2024		Wednesday 31 January 2024		Thursday 1 February 2024	
08:30	Registration; Arrival coffee and tea	08:30	Arrival coffee and tea	08:30	Arrival coffee and tea	08:30	Arrival coffee and tea
09:00	Cape-KR introduction by Tommie Meyer	09:00	BRAON/Cape-KR	09:00	Talk by Mantas Šimkus	09:00	Talk by Eduardo Fermé
09:30	Introduction by all attendees (3 mins each)	09:30	Tutorial by Enrico Franconi	10:00	Student talk by Frances Gillis-Webber	10:00	BRAON/Cape-KR
10:30	Coffee/Tea	10:30	Coffee/Tea	10:15	Student talk by Martha Kamkuemah	10:30	Coffee/Tea
11:00	Tutorial by Gabriele Kern-Isberner	11:00	Tutorial continued	10:30	Coffee/Tea	11:00	Talk by Sebastian Rudolph
12:00	Lunch	12:00	Lunch	11:00	Student talk by Aidan Bailey	12:00	Lunch
14:00	Tutorial continued	14:00	Student talk by Victoria Chama	11:15	Student talk by Luke Slater	14:00	Mentoring session
15:00	Coffee/Tea	14:15	Student talk by Lewis Kaplan	11:30	Student talk by Steve Wang	15:30	Coffee/Tea
15:30	Student talk by Jonas Haldmann	14:30	Student talk by Markus Kruger	11:45	Student talk by Chiplo Hamayobe	16:00	Talks/discussion
16:00	Student talk by Clayton Baker	14:45	Student talk by Jane Imrie	12:00	Lunch	19:00	Cape-KR dinner
16:30	Student talk by Tobias Geibinger	15:00	Coffee/Tea	14:00	Excursion to Table Mountain		
		15:30	Student talk by Nicholas Leisegang				
		15:45	Student talk by Benjamin Sturgeon				
		16:00	Student talk by Brian Msane				
		16:15	Student talk by Taurai Chikote				

What is Cape-KR 2024?

- 3 tutorials
- 3 invited talks
- Talks by students
- Mentoring session
- Some talks/discussions
- Sessions on BRAON/Cape-KR
- Wrapup session
- An event photograph (Wednesday before lunch)
- Excursion to Table Mountain (on Wednesday afternoon)
- Event dinner (on Thursday evening)

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-
- Lunch and coffee breaks are just outside
 - **Lunch is included on all 5 days**



Invited talks and
tutorials

Monday 29 January 2024

11:00-12:00 & 14:00-15:00

Inductive reasoning, conditionals, and belief revision
by **Gabriele Kern-Isberner, TU Dortmund**
(partly joint work with Wolfgang Spohn, University of Konstanz)



This talk/tutorial presents a broad view on inductive reasoning by embedding it in theories of epistemic states, conditionals, and belief revision. More precisely, we consider inductive reasoning as a specific case of belief revision on epistemic states which include conditionals as a basic means for representing beliefs. We present a general framework for inductive reasoning from conditional belief bases that also allows for taking background beliefs into account, and illustrate this by probabilistic reasoning based on optimum entropy as well as by ranking-theoretic reasoning based on so-called c-revisions. We illustrate the constructive usefulness of our approach, as well as its integrating power.



Cape-KR 2024

Invited talks and
tutorials

Tuesday 30 January 2024
09:30-10:30 & 11:00-12:00

**Knowledge Representation and Databases: well-
founded approaches**
by **Enrico Franconi, Free University of Bozen**



Using a classical logic setting, I will introduce the formalisation of knowledge bases, databases, and their interoperability. Starting from the classical formalisation of databases and knowledge bases from database theory, I will introduce the notion of query answering in the various approaches. I will then focus on the notion of knowledge representation as the basis for describing conceptual models, and how conceptual models can be formally reverse engineered from databases. I will also mention views and view updates, based on the notion of lossless transformations of knowledge bases.



Invited talks and
tutorials

Friday 2 February 2024

09:00-10:00

**Foundations of logic programming semantics: an
operator-based perspective**

by Jesse Heyninck, Open Universiteit Heerlen



Logic programming is one of the most popular and successful KR-languages, and offers efficient solvers, paradigmatic applications, and a host of extensions and tools. Even though the answer set semantics has been consolidated as the main semantics for logic programming, other interesting semantics exist, and extending the answer set semantics beyond the core language fragment often proves challenging.

This tutorial offers an account of the semantics of logic programming from the perspective of approximation fixpoint theory (AFT). We will survey the main ideas behind this theory, using normal logic programs as a leading example. Furthermore, it is demonstrated how the framework allows defining semantics for extensions to normal logic programs, such as disjunctive, aggregate or choice logic programs, or autoepistemic logic.



Invited talks and
tutorials

Wednesday 31 January 2024

09:00-10:00

Comparing SHACL and OWL from the Perspective of
Description Logics
by **Mantas Simkus, TU Wien**



SHACL and OWL are two prominent standards of W3C for managing graph-structured data on the Web. These two languages are designed for different purposes, yet they also have significant commonalities. Specifically, SHACL is designed for expressing constraints and performing validation of graph-structured data, while OWL is geared towards describing general knowledge about problem domains and enabling automated reasoning over datasets containing graph-structured data. The goal of this talk is to discuss the differences and the commonalities of SHACL and OWL by employing the framework of Description Logics (DLs). We will recall the well-known connection between DLs and OWL, and then focus on showing how SHACL can be positioned in the context of DLs. Specifically, we will discuss some of the efforts to clarify the semantics of (recursive) SHACL, the connection between SHACL and DL terminologies, the efforts obtain new formalisms that combine SHACL and OWL, and the new methods for explaining and possibly repairing constraint violations in SHACL.



Invited talks and
tutorials

Thursday 1 February 2024
09:00-10:00

**On belief update according to Katsuno & Mendelzon:
Novel insights.**
by Eduardo Fermé, University of Madeira



Abstract: The aim of Belief Change Theory is to provide a formal framework for understanding how an agent's beliefs evolve in response to new evidence. Over the past 35 years, various operators have been proposed to handle different types of situations and evidence. The core of this theory consists of belief revision operators, which are designed to update an agent's beliefs based on more reliable evidence. The standard model is the AGM revision, proposed by Alchourrón, Gärdenfors and Makinson.

Another important class of operators are update operators proposed by Katsuno and Mendelzon in 1991 (KM-update). The difference between revision and update operators is that revision operators aim to correct an agent's beliefs, whereas update operators aim to incorporate the results of a change in the world, without presuming that the agent's previous beliefs were incorrect. This difference is often summarized as belief revision being concerned with changing beliefs in a static world, while update is concerned with the evolution of beliefs in a dynamic world.

In this presentation, we will showcase recent research that revolves around the KM-update model of belief change.

The interconnection between KM update and AGM revision. We will examine the relationship between these two approaches.

The relation with Erasure and constructive methods for KM update

The iteration of update. We will explore the methodology of incorporating iterative updates, drawing inspiration from the work of Darwiche and Pearl of iterated AGM revision.

KM-update assumes that any situation can be updated into one satisfying that input, which is unrealistic. We propose and characterize a model where not all the inputs are "reachable". The model's efficacy in accurately capturing changes occurring in the world.

By delving into these areas, we aim to provide a comprehensive understanding of KM-Update and its associated research developments.



Thursday 1 February 2024

11:00-12:00

How to Agree to Disagree: Managing Ontological Perspectives using Standpoint Logic by Sebastian Rudolph, TU Dresden



The importance of taking individual, potentially conflicting perspectives into account when dealing with knowledge has been widely recognised. Many existing ontology management approaches fully merge knowledge perspectives, which may require weakening in order to maintain consistency; others represent the distinct views in an entirely detached way. This talk presents an alternative, referred to as Standpoint Logic, a simple, yet versatile multi-modal logic “add-on” for existing KR languages intended for the integrated representation of domain knowledge relative to diverse standpoints, which can be hierarchically organised, combined, and put in relation with each other.

Starting from the generic framework of First-Order Standpoint Logic (FOSL), we first present the fragment of so-called sentential formulas, for which we provide a polytime translation into the standpoint-free version. This result yields decidability and favourable complexities for several decidable fragments of first-order logic, including the very expressive description logic SROIQbs underlying the OWL 2 DL ontology language. By virtue of this, existing highly optimised OWL reasoners can be used to provide practical reasoning support for ontology languages extended by standpoint modelling.

Shifting our focus to tractable lightweight formalisms of enhanced scalability, we present Standpoint EL+, a standpoint extension of the popular description logic EL. Satisfiability in this logic is in PTime thanks to a satisfiability-checking deduction calculus that allows for an implementation in Datalog.

Student Talks



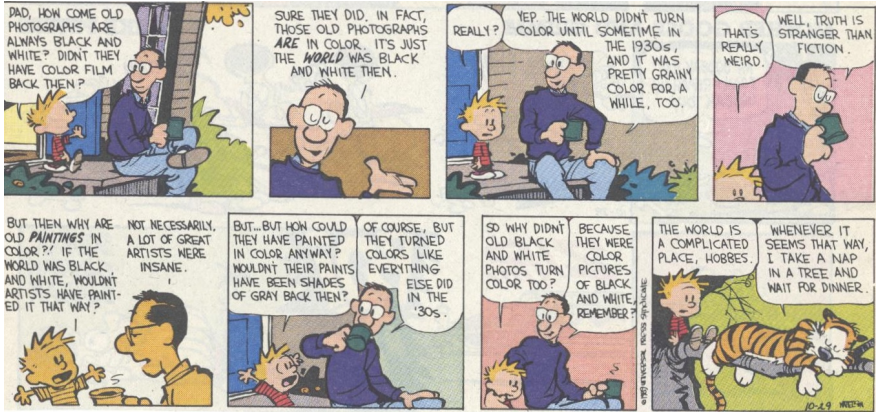
"DUSK! WITH A CREEPY, TINGLING SENSATION, YOU HEAR THE FLUTTERING OF LEATHERY WINGS! **BATS!** WITH GLOWING RED EYES AND GLISTENING FANGS, THESE UNSPEAKABLE GIANT BUGS DROP ONTO..."



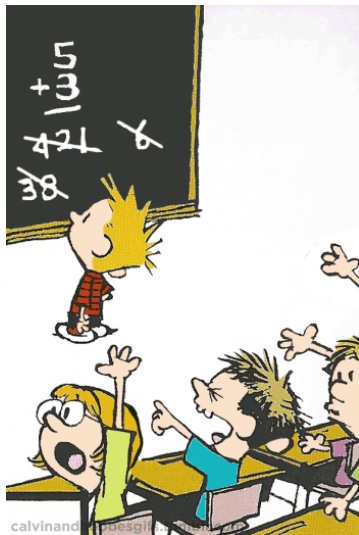
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Mentoring Session



Talks/Discussions





6th Madeira Workshop on Belief Revision, Argumentation, Ontologies, and Norms

March 21st - 25th 2024 - Madeira - Portugal

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[Madeira](#)

 [Organization](#)

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Welcome

We are pleased to announce the "BRAON (On Belief Revision, Argumentation, Ontologies, and Norms)." The workshop will take place from Thursday March 21st to Monday 25th, 2024 in Madeira and will follow a "Dagstuhl-like" style, i.e., participation is by invitation, but if you have a colleague you want to bring along, please write to us. The agenda of presentations will be defined "on the fly", and we have chosen a beautiful and quiet place to guarantee a working environment suitable for a creative, relaxed, and fruitful meeting.

The main topic of the workshop will be applications of BR and Arg (and extended to NMR in general), in a broad sense. An application is not only a computational issue; for instance, we consider a valid topic the application of belief revision in formal epistemology, psychology, economics, and other areas. In particular, we will consider applications in Ontologies and Norms. If you have topics/ideas to discuss, please email us!

As it happened in the previous editions, we consider that the future of our areas lies with our young PhDs and junior researchers, for this edition, again we have planned one full day devoted to their work. The activities will include:

- (a) short presentations of Ph.D.'s proposals or research projects, with a panel of senior researchers in a Doctoral Consortium style
- (b) short presentations about methodologies followed in the existing lines of research in BRAON
- (c) a meeting with a brainstorming style between juniors and seniors with an open agenda

- As in previous editions, we are planning a special issue in a journal.

This edition will take place in Ponta Delgada (North Coast of Madeira Island) in the Monte Mar Palace. It is the same hotel of the 2015, 2017, 2019 and 2022 editions.

Registration is only by invitation (if you or a colleague want to join the workshop, please email us).

Remember that because of the format of the workshop we have a limited number of places (40); so please confirm that you want to participate as soon as possible in order to reserve your place. We will open the registration soon and the deadline for early registration will be on March 1st.

We hope to see you in Madeira!

Eduardo Fermé and Guillermo Simari

Wrap Up

Wrapping Up

- Cape-KR 2024
- The BRAON/Cape-KR discussion
- The broader Cape-KR discussion
- Possible collaboration

Wrap Up

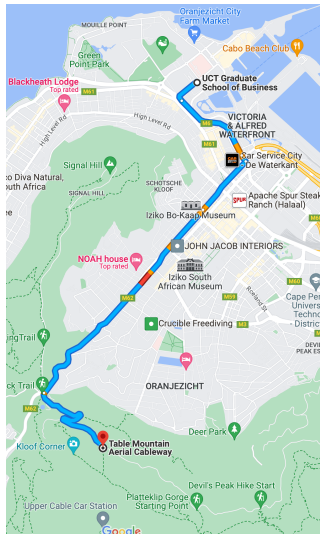
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A Google form with feedback

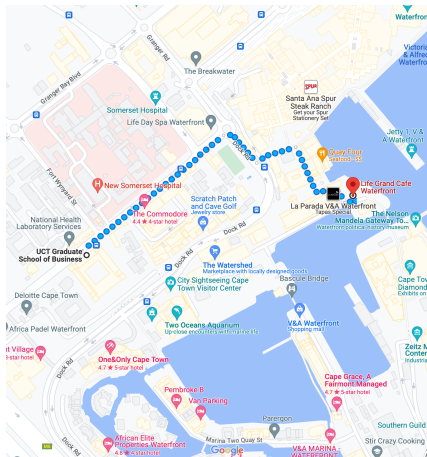
Table Mountain Excursion on Wednesday Afternoon

- Includes a return ticket
- Get your ticket from Tharien during lunch on Wednesday
- Or at the Table Mountain Aerial Cableway between 14:30 and 15:00
- Need to get there on your own
- About 15 minutes by car
- Please bring your badge
- Students, please bring your student cards along on Wednesday **morning**



Cape-KR 2024 Dinner on Thursday Evening

- Meet at the Life Grand Cafe Waterfront at 19:00
- Need to get there on your own
- About 10 minutes by foot
- Please bring your badge



Communication

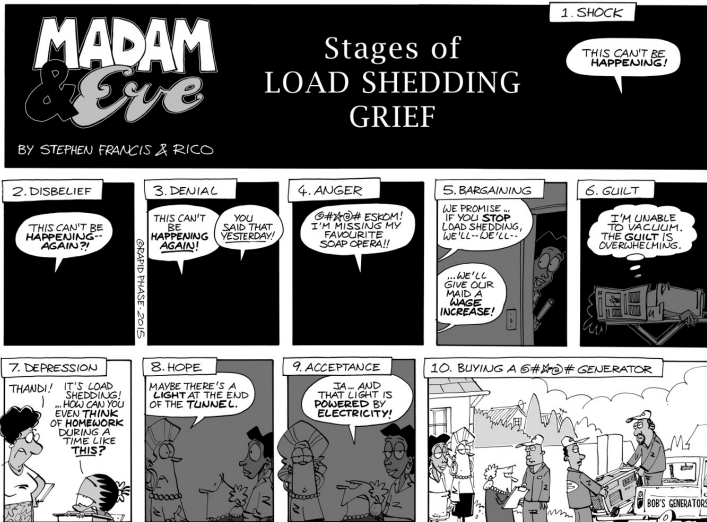
- We have a fixed program

Communication

- We have a fixed program
- But we plan to be flexible
- Changes will be shown on the website (cape-kr.org)
- But also on the Whatsapp group
- Go to the website for the Whatsapp group invitation

Communication

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- But we plan to be flexible
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- Go to the website for the Whatsapp group invitation
- Feel free to take photos during the week
- There is a Cape-KR channel on the KR Community Discord Server:
<https://discord.gg/BBWpqEZT2v>
- We'll place the Discord link on the website (and on Whatsapp)



There is an App for That!



EskomSePush (ESP)

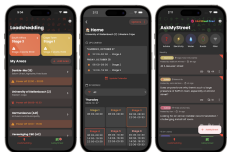
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Thanks to the Tutorial Presenters

Gabriele



Enrico



Jesse



Thanks to the Invited Speakers

Mantas



Eduardo



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Thanks to my co-organisers!

Jesse Heyninck



Tharien Potgieter



Victoria Chama



Thanks to You!

