Commonsense Reasoning ~ Home

- Home
- Organization
- Problem Page
- Winograd Schema Challenge
- Pronoun Disambiguation Problems
- Commonsense 2015
- Past Symposia
- Contact Us

Commonsense-2017

Thirteenth International Symposium on Commonsense Reasoning (Commonsense-2017)

We invite you to participate in Commonsense-2017, to be held at the University College London, November 6-8, 2017.

The biennial Commonsense Symposia series provides a forum for exploring one of the long-term goals of Artificial Intelligence, endowing computers with common sense.

Dates

November 6-8, 2017.

Location

Commonsense-2017 will take place on the campus of University College London:
Haldane Room
Wilkins Building, Gower Street, London WC1E 6BT
Map: https://www.ucl.ac.uk/maps/haldane-room

Registration

Registration costs for this symposium are £25.00, and must be made via the UCL online store:
https://www.ucl.ac.uk/infostudies/commonsense-2017/registration/
Please note that one author from each accepted paper must register by **Friday October 6**.

Local accommodation

Numerous hotels are within walking distance of UCL. Please see the following suggestions, and contact hotels directly for booking:
https://www.ucl.ac.uk/infostudies/commonsense-2017/hotels/

Invited speakers

We are happy to announce two invited speakers for Commonsense 2017:

Murray Shanahan, Imperial College London (bio)
Sebastian Riedel, University College London (bio)

Schedule

Monday November 6

9:30-11:00	**Paper Session 1** Vitaliy Batusov and Mikhail Soutchanski. Situation Calculus Semantics for Actual Causality Christoph Schwering. Reasoning in the Situation Calculus with Limited Belief Christos Vlassopoulos and Alexander Artikis. Towards A Simple Event Calculus for Run-Time Reasoning
11:00-11:30	Coffee break
11:30-13:00	**Paper Session 2** Piotr Chabierski, Alessandra Russo, Mark Law and Krysia Broda. Machine Comprehension of Text Using Combinatory Categorial Grammar and Answer Set Programs Daan Apeldoorn and Gabriele Kern-Isberner. An Agent-Based Learning Approach for Finding and Exploiting Heuristics in Unknown Environments Guillem Collell and Marie-Francine Moens. Acquiring Common Sense Spatial Knowledge through Implicit Spatial Templates
13:00-14:30	Lunch
14:30-15:30	**Keynote: Sebastian Riedel, University College London** title: Reading and Reasoning with Vector Representations abstract: In recent years, vector representations of knowledge have become popular in NLP and beyond. They have at least two core benefits: reasoning with (low-dimensional) vectors tends to lead to better generalisation, and usually scales very well. But they raise their own set of questions: What type of inferences do they support? How can they capture asymmetry? How can explicit background knowledge be injected into vector-based architectures? How can we provide “proofs” that justify predictions? In this talk, I sketch some initial answers to some of these questions based on our recent work. In particular, I will illustrate how a vector space can simulate the workings of logic. bio: Sebastian Riedel is a reader in Natural Language Processing and Machine Learning at the University College London (UCL), where he is leading the Machine Reading lab. He is also the head of research at Bloomsbury AI and an Allen Distinguished Investigator. He works in the intersection of Natural Language Processing and Machine Learning, and focuses on teaching machines how to read and reason. He was educated in Hamburg-Harburg (Dipl. Ing) and Edinburgh (MSc., PhD), and worked at the University of Massachusetts Amherst and Tokyo University before joining UCL.
15:30-16:00	Coffee break
16:00-17:30	**Paper Session 3** Toryn Q. Klassen, Hector J. Levesque and Sheila A. McIlraith. Towards Representing What Readers of Fiction Believe Nikoleta Tsampanaki, Giorgos Flouris and Theodore Patkos. Steps Towards Commonsense-Driven Belief Revision in the Event Calculus Loizos Michael. The Advice Taker 2.0
17:30-18:00	**Discussion re. Commonsense-2019 (part A)**

Tuesday November 7

9:30-11:00	**Paper Session 4** Tim Fernando. Predications, fast and slow Arina Britz and Ivan Varzinczak. Context-based defeasible subsumption for dSROIQ Haythem Ismail and Patrick Attia. Towards a Logical Analysis of Misleading and Trust Erosion
11:00-11:30	Coffee break
11:30-13:00	**Paper Session 5** Adam Richard-Bollans, Lucía Gómez Álvarez, and Anthony Cohn. The Role of Pragmatics in Solving the Winograd Schema Challenge Denis Golovin, Jens Claßen, and Christoph Schwering. Reasoning about Conditional Beliefs for the Winograd Schema Challenge Attila Novák and Borbála Siklósi. A model for high-coverage lexical semantic annotation generation
13:00-14:30	Lunch

14:30-15:30	**Keynote: Murray Shanahan, Imperial College London** title: Naive Physics Revisited abstract: Pat Hayes's naïve physics papers were highly influential in the 1980s and 90s, inaugurating the field of qualitative reasoning, inspiring the CYC project, and laying the foundations of the semantic web. Back then, the underlying motive for studying common sense physics was the development of human-level AI. But this grandiose aim slowly faded into the background of mainstream AI research, and has only recently been revived, under the new moniker of artificial general intelligence (AGI). Nowadays, AGI is being pursued through the methodology of neural networks, an approach that was anathama to the logic-oriented common sense reasoning community that arose in the 1980s. In this talk I will examine the importance of common sense physics for contemporary AGI research, highlighting a number of insights from AI's past that are still relevant today. bio: Murray Shanahan is Professor of Cognitive at Imperial College London and a Senior Research Scientist at DeepMind. He works on artificial intelligence, neurodynamics, and philosophy of mind. Educated at Imperial College and Cambridge University (King's College), he became a full professor at Imperial in 2006, and joined DeepMind in 2017. He was scientific advisor to the film Ex Machina, and regularly appears in the media to comment on artificial intelligence and robotics. As well as many scientific papers he has published several books, including "Embodiment and the Inner Life" (Oxford University Press, 2010) and "The Technological Singularity" (MIT Press, 2015).
15:30-16:00	Coffee break
16:00-17:30	**Panel Session: Evaluation of Commonsense Reasoning** José Hernández-Orallo (Universitat Politècnica de València) Murray Shannahan (Imperial College London) Leora Morgenstern (Leidos) Andrew S. Gordon (University of Southern California) Session chair: Gyorgy Turan (University of Illinois at Chicago)
17:30-18:00	**Discussion re. Commonsense-2019 (part B)**
Evening	Please join us for a group dinner at a local restaurant, location to be determined, at your own expense.

Wednesday November 8

9:00-10:30	**Paper Session 6** Claudette Cayrol, Jorge Fandinno, Luis Fariñas and Marie-Christine Lagasquie-Schiex. Valid attacks in Argumentation Frameworks with Recursive Attacks Nourhan Ehab and Haythem Ismail. LogAG: An Algebraic Non-Monotonic Logic for Reasoning with Uncertainty Theodoros Mitsikas, Nikolaos Spanoudakis, Petros Stefaneas, and Antonis Kakas. From Natural Language to Argumentation and Cognitive Systems
10:30-11:00	Coffee break
11:00-12:30	**Paper Session 7** Amr Dawood and James Delgrande. A Study of Kernel Contraction in EL Bryan Williams, Henry Lieberman and Patrick Winston. Understanding Stories with Large-Scale Commonsense Don Perlis, Justin Brody, Sarit Kraus and Michael Miller. The Internal Reasoning of Robots

Call for Papers

Call for Papers
Thirteenth International Symposium on Commonsense Reasoning (Commonsense-2017)

We invite submissions to Commonsense-2017, to be held in London at the University College London, November 6-8, 2017.

Endowing computers with common sense is one of the major long-term goals of Artificial Intelligence research. Commonsense knowledge and reasoning are relevant for many applications of current interest. Examples include robot and human collaboration, transparent machine-learning systems that can explain their conclusions, social media and story understanding software, and dialogue systems. The recent resurgence of interest in commonsense reasoning reflects a wider societal reaction to current technological advances, such as the fact that "next year a law will come into operation in [EU] member states which gives everyone a right to an explanation of any decision

affecting them that has been reached algorithmically" [Guardian newspaper, 14 April 2017].

Approaches to acquiring commonsense knowledge and performing commonsense reasoning may incorporate semantics-based representation and inference, machine learning, natural language processing, computer vision, and/or cognitive science. The symposium aims to encourage cross-fertilization between these and other techniques. The synthesis of multiple approaches is challenging, but could jump-start progress on many outstanding problems of commonsense reasoning.

We welcome a wide variety of submissions, including formal results, experimental results, demos, surveys, evaluations and comparisons of different approaches, and papers on methodological issues. While mathematical logic has traditionally been the primary lingua franca of the Symposium, we welcome all relevant and rigorous approaches to automating commonsense knowledge and reasoning.

Topics of interest include, but are not limited to:

- Semantics-based representations for specific commonsense domains, such as:
  - Time, change, action, causality
  - Commonsense physical and spatial reasoning
  - Legal, biological, medical, and other scientific reasoning incorporating elements of common sense
  - Mental states such as beliefs, intentions, and emotions
  - Social activities and relationships
- Inference methods for commonsense reasoning, such as:
  - Logic programming
  - Probabilistic, heuristic, and approximate reasoning
  - Nonmonotonic reasoning, belief revision and argumentation
  - Abductive and inductive reasoning
  - Textual Entailment
- Methods for creating commonsense knowledge bases, such as:
  - Statistical and corpus-based techniques, including both traditional machine learning and deep learning
  - Crowdsourcing
  - Hand-crafting domain theories
  - Hybrid methods
- Applications of commonsense reasoning, especially interdisciplinary research in the following areas:
  - Natural language understanding (understanding discourse, question answering, semantic parsing)
  - Image understanding
  - Cognitive robotics and planning
  - Web-based applications (search, internet of things)
  - Support technologies (computer-aided instruction, home automation)
- Discussions of the science of commonsense reasoning research, including:
  - Meta-theorems about commonsense theories and techniques
  - Relation to other fields, such as philosophy, linguistics, cognitive psychology, game theory, and economics
  - Challenge problem sets and benchmarking

By default accepted papers will be published shortly after the symposium in the CEUR Workshop Proceedings series. Authors may however opt out of publishing in CEUR, e.g. if they wish to publish their paper at another venue. All accepted papers will be made available on the commonsensereasoning.org website for the duration of the symposium. A special issue of Annals of Mathematics and Artificial Intelligence, which will include selected and extended papers from Commonsense-2017, is currently planned; journal submissions will be due in winter 2018.

Important Dates

- Submissions due: Extended to Tuesday, August 8, 2017
- Submission notification date: September 8, 2017
- Camera-ready versions due: Extended to October 20, 2017
- Symposium: November 6-8, 2017

Submissions

- Submissions will be made through EasyChair, at: https://easychair.org/conferences/?conf=commonsense2017
- Papers are limited to 6 pages, prepared in IJCAI or AAAI format, using Letter or A4 sized paper, plus one additional page for references.

Review Process

Each paper will receive three blind peer reviews. Selection criteria include novelty, technical accuracy and rigor, significance and generalizability, relevance, and quality of writing. Anonymization of papers is not required.

Invited Speakers

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Sebastian Riedel, University College London (bio)

Conference Chairs

Andrew S. Gordon, University of Southern California
Rob Miller, University College London
Gyorgy Turan, University of Illinois at Chicago and University of Szeged

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Website

http://commonsensereasoning.org

For questions or comments about commonsensereasoning.org please email leora@cs.nyu.edu.

Website design by Benjamin Johnston, based on the Fluid 960 Grid System by Stephen Bau and Nathan Smith.
Crowd photo by James Cridland.