



42nd International ACM SIGIR
Conference on Research and
Development in Information Retrieval

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#### **GENERAL CHAIRS' WELCOME**

It is our great pleasure to welcome you to SIGIR 2019, the 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval. This year, the conference takes place in Paris, France. Paris is an important scientific center in Europe, with an estimated 670.000 students in all disciplines, from Arts and Humanities to Medecine and Computer Science.

The conference starts on the 21th of July, with tutorials and doctoral consortium sessions. The three following days are dedicated to the main conference, with both research and application sessions. The last day is dedicated to workshops.

The technical program includes two highly stimulating keynotes by Bruce Croft and Cordelia Schmid. On Tuesday, July 23, we put an highlight on the SIRIP (Industry) session, with an attractive panel on the topic "To what degree is academic research in IR/Search useful for industry, and vice versa?", moderated by Ricardo Baeza-Yates. There are two SIRIP keynotes (Tuesday and Wednesday afternoon), by Yoelle Maarek and Jochen L. Leidner.

We also want to point out the "Diversity & Inclusion Lunch" (Tuesday, July 22), with a keynote from Jennifer Rode, and the "Women in IR" meeting, just before the Gala on Tuesday, July 23, with a keynote by Mounia Lalmas.

Lastly, we would like to take this opportunity to thank everybody who helped us in setting up SIGIR 2019. First of all, we want to thank all our sponsors who provided generous support allowing us to fund many students and to keep the registration fees as low as possible.

Organizing this conference was a hard teamwork. SIGIR 2019 was mainly backed up by the French Association for Information Retrieval and Applications (ARIA). We want to thank everybody involved in making SI-GIR 2019 an exciting and (hopefully) successful conference. First and foremost, we thank all the chairs involved in selecting papers and proposals



and putting together an exciting scientific program.

We also warmly thank all the chairs involved in the organization of SIGIR 2019. You will find their names in the next pages.

As nothing could have been done without them, we also want to thank all the members of the program committee, and more generally all those who reviewed papers and proposals. Our final thanks go to all who will invest their time during the conference to help make SIGIR 2019 a successful event.

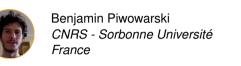
We wish you a very enjoyable SIGIR 2019!

Benjamin Piwowarski, Max Chevalier and Eric Gaussier

#### CONFERENCE ORGANIZATION

#### **General Chairs**







Max Chevalier Université de Toulouse, CNRS France



Éric Gaussier Université Grenoble Alpes, CNRS France

#### **Program Chairs**



Yoelle Maarek Amazon Research, Israel



Jian-Yun Nie University of Montreal, Canada



Falk Scholer RMIT University, Australia

#### **Short Paper Chairs**



Zhicheng Dou Renmin University of China China



Mounia Lalmas Spotify, UK



Marc Najork Google, USA

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Tie-Yan Liu Microsoft Research Asia, China



Arjen P. de Vries Radboud University and Spingue The Netherlands



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Hugo Zaragoza *Amazon, Spain* 



Gabriella Kazai *Microsoft, UK* 



Isabelle Moulinier Capital One, USA

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TU DELFT, The Netherlands



Min Zhang Tsinghua University, China



Tat-Seng Chua National University of Singapore Singapore

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Evgeniy Gabrilovich Google, USA

#### Logo



Julien Velcin Université Lyon 2, France

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Sylvain Lamprier Sorbonne Université, CNRS, France

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Jean-Michel Renders
Naver Labs Europe, France

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Michel Beigbeder EMSE, France



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Patrice Bellot
Aix-Marseille Université, CNRS
France

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Catherine Berrut Université Grenoble Alpes CNRS. France



Josiane Mothe Université de Toulouse CNRS, France



Lorraine Goeuriot Université Grenoble Alpes CNRS, France



Julien Velcin Université Lyon 2, France



Mohand Boughanem *Université de Toulouse CNRS. France* 



Patrick Gallinari Sorbonne Université CNRS. France

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Pierre Zweigenbaum CNRS, Université Paris-Saclay, France



Lynda Tamine Université de Toulouse, CNRS, France



SIGIR 2019 21-25 July

#### **DETAILED SCHEDULE**

#### Sunday, July 21

12:30-13:30 Lunch

08:15-09:00 Registration

10:30-11:00 Coffee Break

15:00-15:30 Coffee Break

09:00-10:30 Tutorials & Doctoral Consortium

11:00-12:30 Tutorials & Doctoral Consortium

13:30-15:00 Tutorials & Doctoral Consortium

15:30-17:00 Tutorials & Doctoral Consortium

20:00-23:00 Welcome Reception at Natural History Museum		
Full-day tutorials		
Learning to Rank in theory and practice: From Gradient Boosting to Unbiased Learning	Neural Networks and Gaston Berge	
Effective Online Evaluation for Web Search	Salle 3	
Building Economic Models and Measures of Search	Salle 4	
Morning tutorials		
Deep Chit-Chat: Deep Learning for Chatbots	Louis Armand Oues	
Explainable Recommendation and Search	Louis Armand Es	
Example-driven Search: a New Frontier for Exploratory Search	Lof	
Web Table Extraction, Retrieval and Augmentation	Salle 2	
Afternoon tutorials		
Fairness and Discrimination in Retrieval and Recommendation	Louis Armand Oues	
Deep Natural Language Processing for Search Systems	Louis Armand Es	
Extracting, Mining and Predicting Users' Interests from Social Netwo	orks Lof	
Learning to Quantify: Estimating Class Prevalence via Supervised L	earning Salle 2	

Salle AB

**Doctoral Consortium** 

#### Monday, July 22

#### 08:15-09:00 Registration

09:00-09:20 Welcome

#### 09:20-10:20 Keynote

The Importance of Interaction for Information Retrieval Gaston Berger
W. Bruce Croft (University of Massachusetts Amherst and RMIT University)

#### 10:20-11:20 Posters and Demonstrations 1 + Coffee Break

Short Research Papers 1A: AI, Mining, and others	Salle 1
Short Research Papers 1B: Recommendation and Evaluation	Salle 4
Short Research Papers 1C: Search	Salle CD
Demonstration Papers 1: Interactive IR Systems	Salle AB

#### 11:20-12:20 Research Papers sessions 1

Session 1A: Learning to Rank 1	Gaston Berger
Session 1B: Health and Social Media	Louis Armand Est
Session 1C: Search Intents	Auditorium

#### 12:20-13:30 Lunch / Student Luncheon

#### 13:30-15:10 Research Papers sessions 2

Session 2A: Question Answering Gaston Berger
Session 2B: Collaborative Filtering Auditorium
Session 2C: Knowledge and Entities Louis Armand Est

#### 15:10-16:40 Posters and Demonstrations 1 – continued + Coffee break

#### 16:40-18:00 Research Papers sessions 3

Session 3A: Recommendations 1 Auditorium
Session 3B: Interpretability and Explainability Gaston Berger
Session 3C: Fact-checking, Privacy and Legal Louis Armand Est

#### 20:00 Student Party



#### Tuesday, July 23

#### 08:30-09:00 Registration

#### 09:00-10:00 Panel (SIRIP)

Gaston Berger

To what degree is academic research in IR/Search useful for industry, and vice versa?

#### 10:00-11:00 Posters and Demonstrations 2 + Coffee break

Short Research Papers 2A: AI, Mining, and others	Salle 1
Short Research Papers 2B: Recommendation and Evaluation	Salle 4
Short Research Papers 2C: Search	Salle CD
Demonstration Papers 2: Evaluation and Entities	Salle AB

#### 11:00-12:20 Research Papers sessions 4

Session 4A: Recommendations and Classification	Auditorium
Session 4B: Queries	Gaston Berger
Session 4C: Users and Tasks	Louis Armand Est

#### 12:20-13:30 Lunch / DEI Lunch

#### 13:30-15:10 Research Papers sessions 5 / SIRIP 1

Session 5A: Conversation and Dialog	Auditorium
Session 5B: Efficiency, Effectiveness and Performance	Louis Armand Est
SIRIP 1: Voice, entertainment, and suggestions	Gaston Berger

#### 15:10-16:40 Posters and Demonstrations 2 - continued + Coffee break

#### 16:40-18:00 Research Papers sessions 6 / SIRIP 2

Session 6A: Social Media	Louis Armand Est
Session 6B: Personalization and Personal Data Search	Auditorium
SIRIP 2: Recommendation, search and advertising	Gaston Berger

#### 18:15-19:30 Women in IR

#### 20:00-23:30 Gala at the Science Museum

#### Wednesday, July 24

#### 08:30-09:00 Registration

#### 09:00-10:00 Keynote

Automatic Understanding of the Visual World

Gaston Berger

Cordelia Schmid (INRIA)

#### 10:00-11:00 Posters and Demonstrations 3 + Coffee break

Short Research Papers 3A: AI, Mining, and others

Salle 1
Short Research Papers 3B: Recommendation and Evaluation

Salle 4
Short Research Papers 3C: Search

Demonstration Papers 3: Applications

Salle AB

#### 11:00-12:20 Research Papers sessions 7

Session 7A: Relevance and Evaluation 1 Gaston Berger
Session 7B: Multilingual and Cross-modal Retrieval Louis Armand Est
Session 7C: Recommendations 2 Auditorium

12:20-12:50 Lunch (boxes) 12:50-14:20 Business meeting

#### 14:30-15:30 Research Papers sessions 8 / SIRIP 3

Session 8A: User Behavior and Experience

Session 8B: Hashing

Louis Armand Ouest
Session 8C: Summarization and Information Extraction

Gaston Berger
SIRIP 3: Various applications (until 15:50)

Louis Armand Est

#### 15:30-17:00 Posters and Demonstrations 3 – continued + Coffee break

#### 17:00-18:00 Research Papers sessions 9 / SIRIP 4

Session 9A: Fashion Match
Session 9B: Relevance and Evaluation 2
Louis Armand Ouest
Session 9C: Learning to Rank 2
SIRIP 4: Legal IR
Louis Armand Est

#### 18:10-18:50 Past/Next SIGIR and Closing



#### Thursday, July 25

08:30-09:00 Registration

09:00-10:30 Workshops

10:30-11:00 Coffee Break

11:00-12:30 Workshops

12:30-13:30 Lunch

13:30-15:00 Workshops

15:00-15:30 Coffee Break

15:30-17:00 Workshops

#### Morning workshops

OSIRRC 2019 Salle 4

The SIGIR 2019 Open-Source IR Replicability Challenge

#### Full-day workshops

FACTS-IR Salle 1

Workshop on Fairness, Accountability, Confidentiality, Transparency, and Safety in Information Retrieval

ROME 2019 Salle 2

Workshop on Reducing Online Misinformation Exposure

NewsIR'19 Loft

Third International Workshop on Recent Trends in News Information Retrieval

ECOM'19 Louis Armand Est

The SIGIR 2019 Workshop on eCommerce

WCIS 2019 Louis Armand Ouest

1st Workshop on Conversational Interaction Systems

EARS 2019 Gaston Berger

The 2nd International Workshop on ExplainAble Recommendation and Search

BIRNDL 2019 Salle 3

Joint Workshop on Bibliometric-enhanced Information Retrieval and Natural Language Processing for Digital Libraries

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#### KEYNOTES AND PANEL

#### **Keynote 1**

Monday, July 22, 09:20-10:20, Gaston Berger

#### The Importance of Interaction for Information Retrieval

Bruce Croft - University of Massachusetts Amherst and RMIT University USA/Australia

**ABSTRACT:** There has historically been a divide between the user-oriented and system-oriented research communities in information retrieval. In my opinion, this divide is based primarily on a difference in viewpoint about the relative importance of understanding how people search for information compared to developing new retrieval models and ranking algorithms. There is strong agreement, however, that the interaction between the user and the search engine is a fundamental part of the IR process. The IR field was one of the first in computer science to recognize the importance of the user-system interaction, which led to a number of core concepts such as relevance, ranking, result presentation, feedback, evaluation, and browsing. Continuing the discussion of interaction in the past two Salton Award lectures from Jarvelin and Belkin, the key message of this talk is that effective information access requires interaction between the user and the system, where both play a role. Additionally, there is growing evidence that even more effective information access can be achieved by a system that actively supports interaction, particularly in the limited-bandwidth environments provided by mobile devices and voice-based assistants.

In this talk, I will first give an overview of past IR research on usersystem interaction. In much of this research, the system provides passive support for the retrieval process and much of the burden for effective retrieval stays with the user. There has been some research, however, that has attempted to actively support the interaction by designing expert intermediary systems. After this review, I will focus on two current areas of research where active support for interaction is crucial. These are question answering and conversational search. These areas have recently become popular in the NLP community but they have deep roots in IR. I will describe the specific lines of research we have followed at the Center for Intelligent Information Retrieval and RMIT, including interactive answer passage retrieval, studies of information-seeking dialogues, and neural models for selecting responses and answers. Although there are many aspects to this research, I will highlight the parts where interaction is important, how we have attempted to evaluate the research, and where significant progress needs to be made.



**BIOGRAPHY:** W. Bruce Croft is a Distinguished Professor Emeritus at the University of Massachusetts Amherst, Director of the Center for Intelligent Information Retrieval (CIIR), and Senior Research Fellow at RMIT University, Melbourne. He is an ACM Fellow and has received four lifetime achievement awards for his research, including the Gerard Salton Award from ACM SIGIR. Five

of his papers have received SIGIR Test of Time Awards and another three received honorable mentions. His Google h-index is currently 103.

#### **Panel**

Tuesday, July 23, 09:00-10:00, Gaston Berger

To what degree is academic research in IR/Search useful for industry, and vice versa?

#### **PANELISTS:**



Keith Gutfreund Elsevier, USA



Christophe Servan Qwant, FR



Maryam Karimzadehgan Google, USA



Arjen de Vries Radboud Universiteit, NL



Jian-Yun Nie University of Montréal, CA



Emine Yilmaz *UCL, UK* 





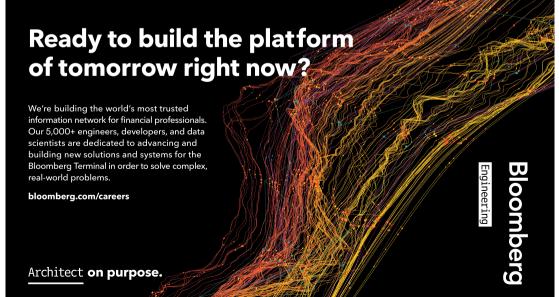
Ricardo Baeza-Yates NTENT, Northeastern University, Universitat Pompeu Fabra, Universidad de Chile



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#### **Keynote 2**

Wednesday, July 24, 09:00-10:00, Gaston Berger

#### **Automatic Understanding of the Visual World**

Cordelia Schmid - INRIA, France

ABSTRACT: One of the central problems of artificial intelligence is machine perception, i.e., the ability to understand the visual world based on input from sensors such as cameras. In this talk, I will present recent progress of my team in this direction. I will start with presenting results on how to generate additional training data using weak annotations, motion information and synthetic data. Next, I will discuss our results for action recognition in videos, where human tubelets have shown to be successful. Our tubelet approach moves away from state-of-the-art frame based approaches and improves classification and localization by relying on joint information from several frames. We show how to extend this type of method to weakly supervised learning of actions, which allows us to scale to large amounts of data with sparse manual annotation. Finally, I will present recent work on grasping with a robot arm based on learning long-horizon manipulations with a hierarchy of RL and imitation-based skills.



**BIOGRAPHY:** Cordelia Schmid holds a M.S. degree in Computer Science from the University of Karlsruhe and a Doctorate, also in Computer Science, from the Institut National Polytechnique de Grenoble (INPG). Her doctoral thesis on "Local Greyvalue Invariants for Image Matching and Retrieval" received the best thesis award from INPG in 1996. She received the Habilitation degree

in 2001 for her thesis entitled "From Image Matching to Learning Visual Models". Dr. Schmid was a post-doctoral research assistant in the Robotics Research Group of Oxford University in 1996–1997. Since 1997 she has

held a permanent research position at INRIA Rhone-Alpes, where she is a research director and directs an INRIA team. Dr. Schmid is the author of over a hundred technical publications. She has been an Associate Editor for IEEE PAMI (2001-2005) and for IJCV (2004-2012), editor-in-chief for IJCV (2013-), a program chair of IEEE CVPR 2005 and ECCV 2012 as well as a general chair of IEEE CVPR 2015. In 2006, 2014 and 2016, she was awarded the Longuet-Higgins prize for fundamental contributions in computer vision that have withstood the test of time. She is a fellow of IEEE. She was awarded an ERC advanced grant in 2013, the Humbolt research award in 2015 and the Inria & French Academy of Science Grand Prix in 2016. She was elected to the German National Academy of Sciences, Leopoldina, in 2017. In 2018 she received the Koenderink prize for fundamental contributions in computer vision that have withstood the test of time. Starting in 2018, she holds a joint appointment with Google research.



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Rakuten Institute of Technology (RIT) is the Research and Innovation department of Rakuten, with teams in Tokyo, Paris, Boston, Singapore, Bengaluru. RIT is a unique environment for scientific research and innovations in the domain of Human-Computer Interactions, Computer Vision, Natural Language Processing, and Machine / Deep Learning



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#### **Exhibitors**







Support for Student Luncheon, Women in IR and Diversity & Inclusion Lunch



#### **Additional Supporters**





















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ounded in 2012, Noah's Ark Lab is the AI research centre for Huawei Technologies. We undertake following primary domains: Computer Vision, Natural Language Processing, Search & Recommendation, Decision & Reasoning, Al Theory, to drive fundamental R&D in Artificial Intelligence.

Our mission is to build AI technology practical to solve real world problems. We entail cutting-edge AI technologies including deep learning, reinforcement learning and unsupervised learning, etc. in multiple areas including network intelligence (automatic control, security and maintenance), enterprise intelligence (safe city, smart supply chain, smart accounting, etc.) and terminal intelligence (AI camera, HiVision, HiVoice, personalized recommendation, etc.).

Now, Noah's Ark Lab has established global footprint including Shenzhen, Beijing, Shanghai, Xi'an, Hong Kong, Paris, London, Montreal, Toronto, etc., and built global research partnership with over 12 top-notch universities including UC Berkeley, University of Waterloo, WASEDA University, Tsinghua University, Peking University, Hong Kong University of Science and Technology, etc.

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#### What are we doing?

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Through our institute of technology and our big data organization, we do research and development in the following fields:

- ✓ Machine Learning
- ✓ Deep Learning
- √ Image Search
- ✓ Information Retrieval
- ✓ Search Engine Development

- ✓ Natural Language Processing
- ✓ Human-Computer Interactions
- ✓ Computer Vision
- ✓ Data Science
- ✓

#### Join Us

If you are curious, come talk to us at the booth.

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#### MAIN SOCIAL EVENTS

#### Welcome reception (Sunday, July 21)

The welcome reception takes place at the Gallery of Evolution of the Musée d'Histoire Naturelle (26 rue Buffon, 75005 Paris). To go to the Museum, you can either:



- Walk to Line 5 (Porte de Pantin, 10 min) Direction Place d'Italie Get off at "Gare Austerlitz" Walk 3min
- Walk to Line 7 (Porte de la Villette) Direction Mairie D'Ivry/Villejuif) ● Get off at "Jussieu" ● Walk 12 min

The reception starts at 20:00 (food at 20:30) and ends at 23:00. You are allowed to visit the main exhibition as well as the special exhibition on Oceans (200 persons max. at the same time, downstairs).

**IMPORTANT:** Please verify you are registered for this event, and that you have a QR code (Whova app or badge).

#### Dinner (Tuesday evening)

The banquet will take place in the Cité des Sciences et de l'industrie within the museum area (Explora, 1st floor). Three exhibitions will be open before and during the diner (Sports and body, Microbiota, and Robots).

- Exhibitions for attendees open around 18:30/19:00 and close at 23:00.
- Diner starts at 20:00 and ends at 0:00.

**IMPORTANT:** Please verify you are registered for this event, and that you have a QR code (Whova app or badge).



#### **OTHER SOCIAL EVENTS**

#### Student Luncheon (Monday lunch) - Loft

The ACM SIGIR Executive Committee will host a Student Lunch during the main conference. Only those with Student registration (and others by invitation only) may register for and attend this event. There is no cost to attendees, but you should RSVP in advance during your registration process, since the number of places is limited (first-come, first-served; see registration form).

#### Student Party (Monday evening)

A student party will be held on Monday, July 22 from 20:00. It will take place at The Who's Bar (1 rue Pierre au Lard, 75004 Paris). To go to the party:



■ Line 7 (Mairie D'Ivry/Villejuif) • Get off at "Chatelet" • Walk 6 min

**IMPORTANT:** Since the number of persons is limited, please verify you are registred for it. We will distribute tickets for a free drink.

#### Women in IR (Tuesday 6:15-7:30 pm) - Auditorium

The Women in IR session of SIGIR 2019 invites all the female participants (male participants are welcome too) to discuss issues relevant to female students/researchers/employees. The session is partially structured and partially interactive. Topics include, but not limited to: how to pitch your ideas and be convincing; how to deal with [un]conscious bias of male classmates, co-workers, etc.; work-life balance. During the session we also provide the opportunity of match-making for those who like to have mentors & those who like to mentor. The matched mentors and mentees will further the related discussions beyond this session.

**Keynote:** Mounia Lalmas (Spotify)

"My life as a researcher: what I loved, what I learned and some humour always".

#### Diversity and Inclusion Lunch (Tuesday) - Loft

This year the ACM SIGIR Executive Committee is again hosting a Diversity and Inclusion Lunch to provide a forum for community members to learn about and discuss issues related to diversity and inclusion. It is open to anyone, and has a nominal additional fee. If interested, please RSVP in advance during your registration, since the number of places is limited (first-come, first-served; see registration form).

Keynote: Jennifer Rode (University College London)

"Accessibility at Conferences and Events"



#### **CONFERENCE VENUE**

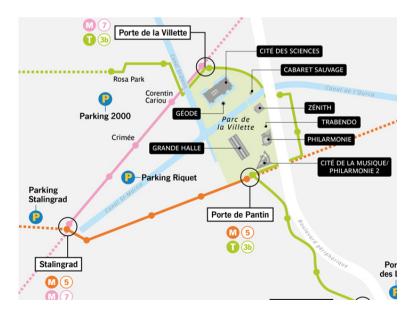
The conference will be held in the Cité des Sciences et de l'industrie located in the north-east of Paris. This is located with the park La Villette which is home to exhibitions, and shows.



The conference center being within a museum, a security check is done at the entrance of the museum. This means:

- Only cabin luggage is OK, but this will make the security check much longer, so please avoid if possible
- Come in advance during the day, queues are mixed with visitors

Below is the map of the Parc La Villette (on the top "Cité des Sciences"). Access from either line 7 ("Porte de la Vilette") or line 5 ("Porte de Pantin").



#### **NAVER**

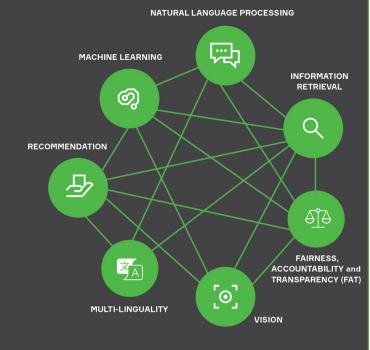
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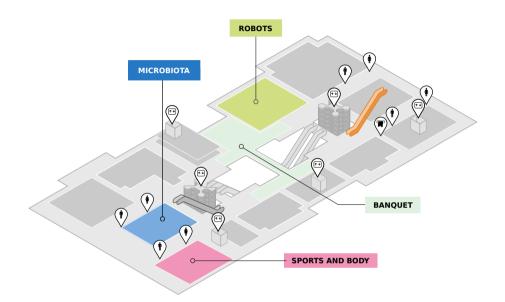


#### Microsoft Research

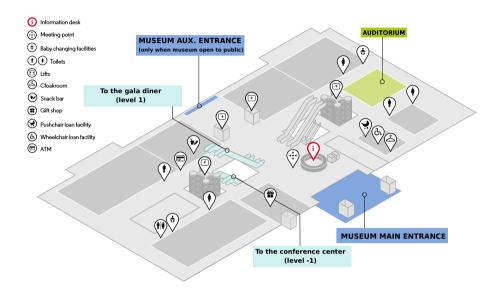
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#### Level 1 (banquet and exhibitions)

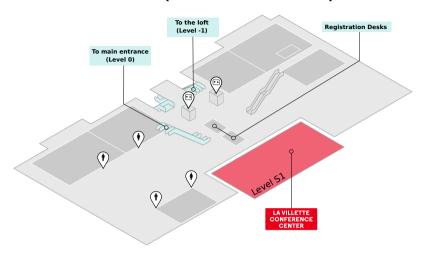


#### Level 0 (Auditorium and main entrance)

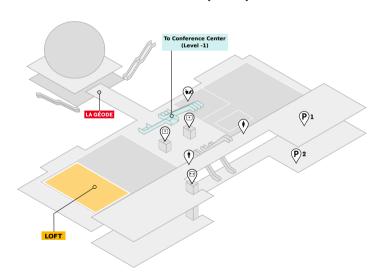




Level -1 (Conference center)



Level -2 (Loft)



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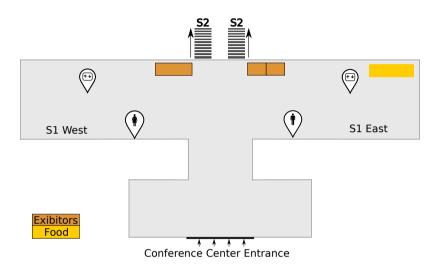
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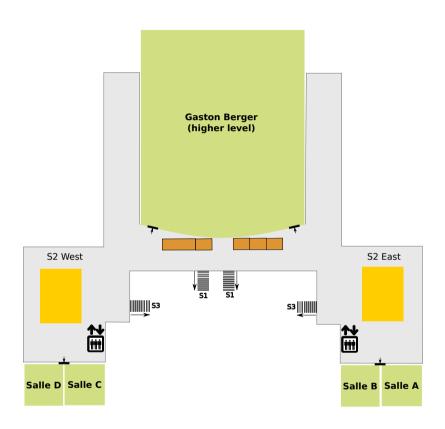
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#### **Conference center**

#### Level S1 (entrance / upstairs)

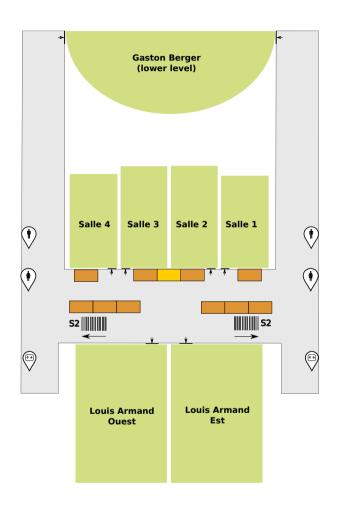


#### Level S2 (middle)





#### Level S3 (downstairs)





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#### 42nd International ACM SIGIR Conference on Research and Development in Information Retrieval

SIGIR is the premier international forum for the presentation of new research results and for the demonstration of new systems and techniques in information retrieval. The conference consists of five days of full papers, short papers, demonstrations, tutorials and workshops focused on research and development in the area of information retrieval, as well as an industry track and social events.

The conference is backed up by the French Association for Information Retrieval and Applications (ARIA) which organizes the yearly IR French CORIA conference.

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