RECSYS 2021

15th ACM Conference on Recommender Systems

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Amsterdam, Netherlands

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RecSys 2021 Chairs' Welcome

It is our great pleasure to welcome you to the 15th ACM Conference on Recommender Systems. RecSys 2021 brings together the major international research groups working on recommender systems, along with many of the world's leading companies active in e-commerce and other adjacent domains. In recognition of the role of the conference in gathering the recommender systems community, the theme of RecSys 2021 is "A place to meet and exchange". Also, for the first time, the conference is hosted in a hybrid mode both via the Internet, reaching people everywhere in the world, and in the historical Amsterdam Stock Exchange Building, which has been transformed into the Amsterdam Conference Centre.

RecSys 2021 builds on the learnings from the RecSys 2020, which was a fully virtual conference. The ability to attend the conference online enabled hundreds of new people to participate in RecSys who could not have been there otherwise. In 2021, our aim is to return to the in-person intensive interaction of a physical conference, while also offering an engaging and participatory experience for a large virtual audience, which we hope will continue to grow.

Our dedicated organizing committee has put together an excellent program, featuring 3 keynotes, 49 technical papers, 3 reproducibility papers, 14 industry talks, 11 industry posters, 10 demonstrations, 23 late-breaking results, 8 doctoral symposium presentations, 6 tutorials, 17 workshops and the RecSys Challenge. This makes RecSys 2021 the richest RecSys to date in terms of content.

The main conference maintains its traditional single-track structure, adapting its schedule to ensure talks can be watched live by as many people as possible around the world. It includes multiple coffee breaks, offering an opportunity for attendees to network with other attendees and sponsors or recharge before the next session. In order to maximize the opportunity to discuss the talks, attendees will be able to ask questions about any talk throughout the conference using the conference app, called the Hub.

Our research paper program is the result of a rigorous reviewing process and the volunteer work of 80 senior and 133 regular program committee members (plus 4 additional reviewers). Each paper was reviewed by a senior PC member and 2-3 regular PC members and meta-reviewed by 1 senior member, providing a total of 1385 reviews. As a way to acknowledge the great amount of work from our committee, we are again awarding "outstanding reviewer awards", which were first introduced in 2018. This year we received 267 submissions; of these 9 were desk-rejected and the rest underwent peer-review. The program committee selected 49 papers for the program (18% acceptance). We look forward to announcing the best paper awards.

RecSys 2021 continues the Reproducibility Track, which was established in 2020, in order to strengthen the scientific rigor of research results by publishing papers that repeat and analyze prior work. The practical application of recommender systems is also a key component of the conference. This year we again offer an interesting demo session, and a large number of industry presentations, both in the form of talks and posters. We continue the tradition of ensuring the up-to-the-moment relevance of the conference content with a conference track featuring late breaking results, which will be presented as posters.

Our industry program focuses on significant real-world challenges facing industrial practitioners and practical solutions to those challenges. The program features a rich set of talks from Amazon, AstraZeneca, BBC, Coveo, Elsevier, Facebook, Google, GrubHub, Netflix, Nike, Randstad, RTL, Salesforce, and ZDF. This year's industry program selected 14 out of 35 submitted proposals (40% acceptance). Acceptance decisions were made considering general community interest in the topic, technical strength, and freshness of the topic. Thanks to the growing interest in industry applications that led to a record number of industry submissions (up 75% from previous years), this year we introduce a new Industry Poster Track, with 11 posters from Bookarang, Booking.com, Dressipi, FINN.no, Heineken, ING, Netflix, Outbrain, Peloton, Seek, Zeta Alpha.

The RecSys 2021 keynotes are special highlights of the conference program. The opening keynote will be given by Max Welling, who is research chair in Machine Learning at the University of Amsterdam and a Distinguished Scientist at Microsoft Research. Prof. Welling will speak about graph neural networks and their use in knowledge representation and recommendation. The second keynote will be given by Natali Helberger, who is Distinguished University Professor of Law and Digital Technology at the University of Amsterdam. Prof. Helberger will offer a legal perspective on recommender systems in a talk entitled, "Regulating Recommenders". She will speak about the recent initiatives of the European Commission aimed at setting a standard for addressing the potential risks and opportunities of recommendation algorithms, and their world-wide implications. Our closing keynote will be given Cynthia Liem, Associate Professor at Delft University of Technology and pianist of the Magma Duo. Her talk will provide a pianist's perspective on recommendation, playing with the idea that a keynote should offer "key notes". She will discuss conceptualizations of recommender systems and how we establish and sustain 'what is worth promoting'.

Our workshops and tutorials showcase the range of interests and expertise in the RecSys community. Our workshop program is an attractive mix of returning workshops and new ones, including some using novel formats and approaches. Many workshops will run hybrid with both a virtual component (before and after the main conference days) as well as a physical component during the morning hours and during the last day of the conference in parallel with the RecSys Challenge, which this year includes a Fairness track. Six tutorials will be presented physically at the venue during morning hours, while being streamed and recorded for later viewing as well.

We continue our efforts to nurture the next generation through our student volunteer cohort and through our doctoral symposium, where 8 junior researchers will receive mentoring and feedback on their research program. To continue our strong community-building tradition, RecSys 2021 has a dedicated program of social activities throughout the main conference, such as the Opening Brunch, the Reception, the Banquet and an official social event. Moreover, this year we invite everyone to a virtual kickoff before the conference, in order to allow virtual and in-person attendees to mingle and to interact with the presenters of industry papers. Additionally, virtual participants will have the opportunity to engage with sponsors during the coffee breaks at virtual sponsor sessions, enjoying a wide breadth of engaging content and conversations.

Throughout the years, the RecSys conference has increased effort in promoting diversity and inclusion in the RecSys community, beginning with the selection of our own organization and program committees. This year's inclusion efforts have several new programs. We adapted the

payment structure to account for differences in currency and income across the globe, making the conference economically accessible for many more people. We provide internet access grants for anyone who incurs extra costs due to attending the conference. We also introduced care grants, which make it possible to reimburse the cost of childcare that allows participants to attend RecSys.

This year's conference is truly a product of our vibrant and supportive community. We are particularly grateful to our sponsors whose generous contributions have helped to make this conference a success. A hybrid conference means that a lot of additional work was done by all committee members, to make sure the physical and virtual components are well integrated and organized. We would therefore like to thank our vast cohort of amazing volunteers, the largest of any RecSys to-date, and all the members of our organizing committee for their generosity, initiative, and dedication to walk the extra mile to bring about a fascinating hybrid conference.

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Keynotes

Graph Neural Networks for Knowledge Representation and Recommendation

Keynote

Max Welling

Abstract

Graph Neural Networks have gained enormous popularity in recent years and found widespread application in, among others, physics and chemistry, computer vision, simulation, healthcare, wireless communication, logistics, natural language processing, causality, knowledge representation and recommendation. In this talk I will give a brief introduction on graph neural networks and their relation to deep learning. I will also discuss how to incorporate symmetries in GNNs and discuss a number of applications on which I have worked. In the last part of the talk I will discuss in a little bit more detail how GNNs can be applied to KR, IR and recommender systems.

Bio

Max Welling is a research chair in Machine Learning at the University of Amsterdam and a Distinguished Scientist at MSR. He is a fellow at the Canadian Institute for Advanced Research (CIFAR) and the European Lab for Learning and Intelligent Systems (ELLIS) where he also serves on the founding board. His previous appointments include VP at Qualcomm Technologies, professor at UC Irvine, postdoc at U. Toronto and UCL under supervision of Prof. Geoffrey Hinton, and postdoc at Caltech under supervision of prof. Pietro Perona. He finished his PhD in theoretical high energy physics under supervision of Nobel laureate Prof. Gerard 't Hooft.

Max Welling has served as associate editor in chief of IEEE TPAMI from 2011-2015, he serves on the advisory board of the NeurIPS foundation since 2015 and has been program chair and general chair of NeurIPS in 2013 and 2014 respectively. He was also program chair of AISTATS in 2009 and ECCV in 2016 and general chair of MIDL 2018. Max Welling is recipient of the ECCV Koenderink Prize in 2010 and the ICML Test of Time award in 2021. He directs the Amsterdam Machine Learning Lab (AMLAB) and co-directs the Qualcomm-UvA deep learning lab (QUVA) and the Bosch-UvA Deep Learning lab (DELTA).

Regulating Recommenders

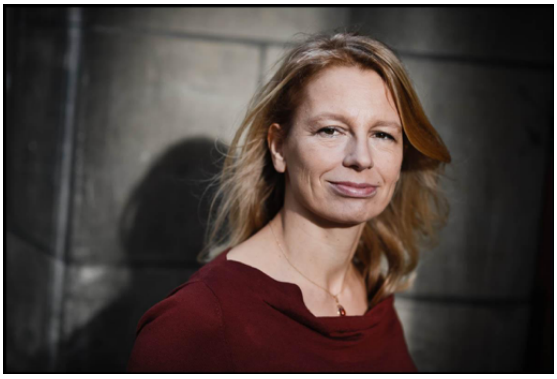
Keynote

Natali Helberger

Abstract

Recommenders are the power engines of the digital society. They order and unlock information online, manage our attention, make and break businesses and control the constant flow of information and disinformation. So much power over markets and society cannot escape the attention of regulators, and in the past year the European Commission has launched into a series of ambitious initiatives to set a (world-wide) standard of dealing with the potential risks and opportunities of recommendation algorithms. While the draft Digital Services Act and the Digital Markets Act very much focus on recommenders controlled by Very Large Online Platform, other initiatives such as the draft AI Regulation or the Data Governance Act pertain to setting the conditions for the operation of recommenders more broadly. In my presentation I will map this emerging landscape of rules and regulations and offer some critical reflections of how they will shape recommender design in the years to come.

Bio



Natali Helberger is Distinguished University Professor of Law and Digital Technology with a special focus on AI at the University of Amsterdam and a member of the board of directors of the Institute for Information Law (IViR), one of the leading information law institutes worldwide. Her research over the past five years has focused on how AI and automated decision making are transforming society and their implications for law and governance. She was awarded an ERC grant for her research about the legal and democratic implications of recommender systems (PersoNews). Together with Prof. Dr. Claes de Vreese, Helberger founded the Research Priority Area Information, Communication, and the Data Society (www.uva-icds.net) at the University of Amsterdam, which has pioneered methods to study the societal impact of digital technologies and shaped the international discussion on filter bubbles, platform governance, data-driven communication, and political microtargeting. She is also one of the founders of the AI, Media & Democracy Lab that brings together media professionals and researchers to research, develop and test AI applications in the media. Natali is regularly asked to advise national and European law makers and regulatory authorities, and is the chair of the Council of Europe Committee on AI and Freedom of Expression.

Key notes from keys and notes: pianist perspectives on recommendation

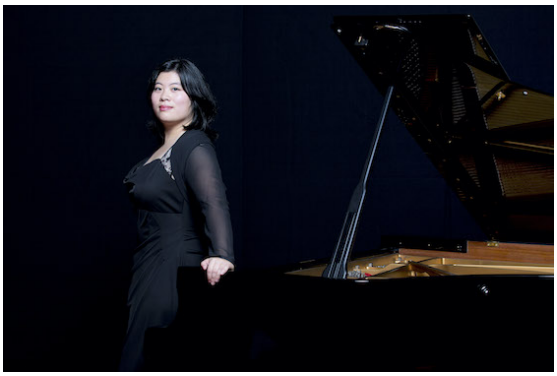
Keynote

Cynthia Liem

Abstract

A recommender makes choices on what—or whom—to promote or deprioritize. In this keynote, I consider this challenge through the different perspectives that I have taken professionally: as a technologist, as earlier-career faculty, but particularly, as a performing artist. Over the past centuries, the perception, reception and promotion of classical music has been evolving and changing. Looking at this more closely raises some interesting questions on how we currently conceptualize our recommender systems, and especially, how we establish and sustain 'what is worth promoting'. As I will argue, going back to Bach and bel canto can be of inspiration in rethinking our future technologies, as well as our own professional roles.

Bio



Cynthia C. S. Liem is an Associate Professor in the Multimedia Computing Group of Delft University of Technology, The Netherlands, and pianist of the Magma Duo. Her research interests focus on making people discover new interests and content which would not trivially be retrieved, and assessing questions of validation and validity, especially in the context of music and multimedia search and recommendation.

She initiated and co-coordinated the European research projects PHENICX (2013-2016) and TROMPA (2018-2021), focusing on technological enrichment of digital musical heritage, gained industrial experience at Bell Labs Netherlands, Philips Research and Google, and served as general co-chair of the 20th anniversary edition of the International Society for Music Information Retrieval (ISMIR) conference in 2019. She was a recipient of the Lucent Global Science and Google Anita Borg Europe Memorial scholarships, the Google European Doctoral Fellowship 2010 in Multimedia, a finalist of the New Scientist Science Talent Award 2016 for young scientists committed to public outreach, and is a member of the Dutch national Young Academy (2021-2026). This year, she is serving as Inclusion and Accessibility Chair at RecSys 2021.

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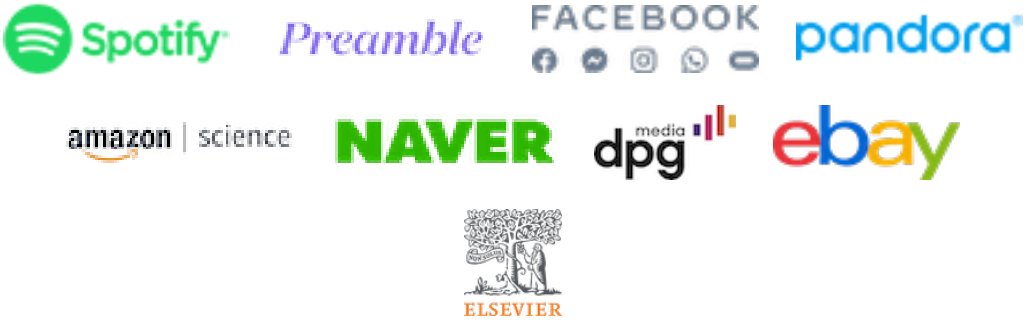

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