

Preface

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Scope of the Conference

DESIRES (*Design of Experimental Search & Information REtrieval Systems*) is a systems-oriented conference, complementary in its mission to the mainstream Information Access and Retrieval conferences like SIGIR, ECIR, and other symposiums focusing on specific aspects of IR such as ICTIR or CHIIR, emphasizing the innovative technical aspects of search and retrieval systems.

DESIRES gathers researchers and practitioners from academia and industry to discuss the latest innovative and visionary ideas. This conference series provides the IR community a venue for presenting innovative search systems architectures and a publication opportunity. DESIRES does not compete with the established conferences presenting rigorous treatises in established areas; instead, its goal is to air radically new ideas.

DESIRES mainly encourages papers about innovative and risky information access and retrieval system ideas, systems-building experiences and insights, resourceful experimental studies, provocative position statements, and new application domains. DESIRES also welcomes contributions focusing on implementation details, successful or failed reproducibility attempts, technological breakthroughs, and new uses of old ideas.

Traditionally, program committees in the IR field reward scholarship on specific ideas, operate by consensus, and discard “loosey-goosey” papers, including half-baked ideas and submissions that resemble war stories from the field. The major IR conferences usually reject such submissions because they are not rigorously scientific. However, these papers offer long-term value to the field and should be widely disseminated. DESIRES values innovation, experience-based insight, and vision.

DESIRES focuses on discussing, learning, and thinking about new ideas. Hence, no discussion was shut off with the “let’s take this offline” key phrase. If the discussion ran longer than

DESIRES 2022 – 3rd International Conference on Design of Experimental Search & Information REtrieval Systems, 30–31 August, 2022, San Jose, CA, USA

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CEUR Workshop Proceedings (CEUR-WS.org)

expected, we exploited the program's flexibility to adjust the following talks' schedule.

DESIRES is a single-track conference, and to encourage authors to submit their best work, each person can be an author or co-author of only a single paper or prototype (plus one abstract).

This proceedings comprises four types of contributions:

Full papers Papers present radical departures from conventional approaches and enable new applications. They usually lack rigorous frameworks, simulations of performance, or prototype implementations.

Prototypes Prototype descriptions are detailed reports on successes and mistakes.

Abstracts Abstracts present too half-baked ideas for a paper or prototype.

Open Problems in IR These are abstract-like papers framing an important but unsolved problem in IR.

Originally, DESIRES was designed to run every other year in a retreat-like fashion (around the time of the *European Summer School in Information Retrieval* (ESSIR)); ESSIR runs on odd years, DESIRES on even years. The first edition took place in 2018 in Bertinoro (Italy). Then due to the COVID-19 pandemic, DESIRES 2020, initially planned in Venice (Italy), was postponed to Padua (Italy) in 2021. The third edition was in San Jose in 2022. The next edition will be in September 2024 in Italy.

Foreword to the Proceedings

These proceedings contain the papers selected for presentation at the *Third International Conference on Design of Experimental Search & Information REtrieval Systems* (DESIRES 2022).¹ The conference was held on 30 and 31 August 2022 at Northeastern University, California, USA.

DESIRES 2022 received 15 submissions in two broad categories: 6 full papers and 9 short papers (abstracts, prototypes, and open problems).

All the papers were reviewed by at least two members of an international Program Committee formed by experts from industry and academia. Of the papers submitted to the conference, 4 full and 5 short papers were accepted for oral presentation.

In addition, there were two panels. The first panel was on *Embeddings and Neural Search in IR* chaired by Omar Alonso, with panelists Baldo Faieta (Adobe) and Jeff Dalton (University of Glasgow). The second panel was on *Bridging IR Metrics and Business Metrics in Search and Recommendations* chaired by Gianmaria Silvello, with panelists Andy Edmonds (Quora), Nikos Vlassis (Adobe), and Vamsi Salaka (Amazon).

Finally, DESIRES 2022 would not have been possible without financial support from the ExaMode H2020 EU project (gold sponsor), Bloomberg, Google, and Northeastern University (silver sponsors).

¹<http://desires.dei.unipd.it/2022/>

Keynotes

There were three keynotes.

The first keynote was by Jan Pedersen (Walmart Global Technology Group, USA), titled *Product Search at Walmart*.

Abstract: The modern, digital-first, retail experience provides consumers access to a potentially limitless inventory of goods. In the marketplace, search plays the role of matchmaker, connecting consumers' interests, expressed as free-text queries, with relevant items from a large product catalog, and hence is integral to the experience. We refer to this specific search application as Product Search, to distinguish it from e.g. Web Search or Map Search. Product Search operates over semi-structured data, the product catalog, and is generally restricted to transactional intents. Within this scope there are a variety of challenges, such as data enhancement, query understanding, semantic search and cold start issues. This talk surveyed some of the approaches taken to address these problems at Walmart Search.

The second keynote was by Yi Zhang (UC Santa Cruz, USA), titled *Democratization of the development of Conversational IR virtual assistants*.

Abstract: Conversational virtual assistants, including those for search and recommendations, are becoming increasingly important in the IR field and are being launched by companies in production. To provide the best performance and user experience for conversational IR virtual assistants, responsibility for developing and delivering conversational IR virtual assistants needs to be "democratized", growing from the IR/AI/IT teams to designer, business oriented interdisciplinary teams or even to everyone.

The third keynote was by Nadia Fawaz (Pinterest, USA), titled *Inclusive Search and Recommendations*.

Abstract: To truly bring everyone the inspiration to create a life they love, Pinterest is committed to content diversity and to developing inclusive search and recommendation engines. A top request we hear from Pinners is that they want to feel represented in the product. This is why we built the skin tone range and hair pattern technologies. These machine learning technologies are paving the way for more inclusive inspirations in Search and our augmented reality technology Try-On, and driving advances for more diverse recommendations across the platform. Developing inclusive AI in production requires an iterative and collaborative approach. We have learned the importance of building inclusive systems by design, of measuring to make progress, and of leveraging both artificial and human intelligence. We recognize that these challenges are multi-disciplinary, not just technical.

Organization

DESIREs was realized by the general chairs with the support and suggestions of the advisory board. Advisory board members were selected from top senior members of the IR community seeking a balance between industry and academia. We thank the advisory board members for their work and contribution to the conference. We thank all Program Committee members for their time and effort in ensuring the high quality of the DESIREs 2022 program.

General Chairs

Omar Alonso (Amazon, USA)
Ricardo Baeza-Yates (Institute for Experiential AI, Northeastern University, USA)
Tracy Holloway King (Adobe Systems Inc, USA)
Gianmaria Silvello (University of Padua, Italy)

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