

EACL 2024

**The 18th Conference of the European Chapter of the
Association for Computational Linguistics**

Proceedings of the Conference, Vol. 1 (Long Papers)

March 17-22, 2024

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Message from the General Chair

Welcome to the 18th Conference of the European Chapter of the Association for Computational Linguistics. EACL is the flagship European conference dedicated to European and international researchers, covering a wide spectrum of research in Computational Linguistics and Natural Language Processing.

Organizing a scientific conference of the prestige and size of EACL is a great honor, a great responsibility, and a great challenge. The challenges started right at the beginning. When I accepted the invitation to be general chair, even after the program chairs Yvette Graham and Matt Purver accepted, we didn't know where the conference would be located. Eventually, we settled on Malta, a wonderful island in the Mediterranean with lovely weather in March. Well, putting it in March was the next challenge as the conference dates were moved backwards a couple of times, turning the entire organization of the conference into a race against time.

Another big challenge was the joint effort of all *ACL 2024 conferences to streamline the review process by moving it completely to ACL Rolling Review. While there had been some attempts to integrate ARR into the conference reviewing process, 2024 will be the year where we see whether it actually works. I'd like to thank Yvette and Matt for being so brave to chair the first conference in 2024 adopting ARR only. I'd also like to thank the General Chairs of NAACL 2024 and ACL 2024, Katrin Erk and Claire Gardent, and their respective PC chairs to join the effort. Without the ARR team this could not have worked out, namely the ARR Editors in Chief, Mausam, Viviane Moreira, Vincent Ng, Lilja Øvrelid, Tamar Solorio, and Jun Suzuki were indispensable for making this happen.

For me it started all with Roberto Basili and Preslav Nakov, the 2023 and 2024 Presidents of EACL, asking me whether I'd like to serve as general chair for EACL 2024 – thanks for having trusted me to manage the organization of the conference. After Yvette Graham and Matt Purver accepted the role of PC chairs, I knew that I wouldn't have to worry anymore about the scientific program. A big thanks to Yvette and Matt! Behind the scenes Jennifer Rachford (ACL Event Manager) and her team, in particular Megan Haddad and Jon M. Dorsey, made the impossible happen. Jenn does what we scientists are not good at, and then a lot more. I don't know how we could have run EACL 2024 without her. Roberto Basili, Preslav Nakov, the EACL board, and David Yarowsky (ACL treasurer) provided me with information, advice and feedback whenever I needed it. A great thanks also goes to the EACL 2024 workshop chairs, Nafise Moosavi and Zeerak Talat! Because EACL is the first conference in 2024, they spearheaded the *ACL joint call for workshop proposals. They worked with an extremely tight timeline, created a very interesting workshop program and had the organizers of 19 workshops under control. Very impressive, Nafise and Zeerak!

A special thanks goes to Claudia Borg from the University of Malta. Claudia was instrumental for the success of the conference dealing with all sorts of local issues. She helped us selecting the venue, connected us with local event organizers, was part of the volunteer program, and made sure that visas were issued to participants who needed them. Claudia is great!

And then ...

- The tutorial chairs, Sharid Loáicga and Mohsen Mesgar, worked together with the tutorial chairs of all *ACL conferences to review tutorial proposals and select some for EACL 2024.
- The demonstration chairs, Orphée de Clercq and Nikolaos Aletras, created the demo program for EACL 2024.
- The student research workshop chairs, Neele Falk, Sara Papi, and Mike Zhang, along with their faculty advisors Parisa Kordjamshidi and Steffen Eger, took care about the next generation of NLP researchers.

- The publication chairs, Gözde Gül Sahin and Danilo Croce, did a tremendous job in getting all the papers into a nice shape worthy of the European flagship conference in Computational Linguistics.
- The handbook chair, Marco Polignano, helped us to navigate through the program so that we wouldn't miss any interesting presentation.
- The sponsorship chairs, Daniel Dahlmeier and Pasquale Minervini, worked together with the ACL sponsorship director Chris Callison-Burch to make EACL 2024 the ends meet in economically challenging times.
- The diversity and inclusion chairs, Hanan Al Darmaki, Sabine Weber, and Maciej Ogrodniczuk, ensured that researchers who are not from the global north can join our conference, in person or virtually. They also kicked off an amazing set of D&I events at the conference.
- The publicity chairs, Miryam de Lhoneux, Sungho Jeon, and Yuval Pinter, spread the word – and also pictures – through social media platforms.
- The website chairs, Mladen Karan and Wei Zhao, created a beautiful webpage. They were super responsive. Thanks a lot for the good work!
- The local ambassador, Max Bartolo, provided us with information on Malta early on. Talk to him for food options, bars, excursions, fun stuff to do!
- The ethics chairs, Annemarie Friedrich and Anne Lauscher, helped us to solve difficult ethical issues with the papers.
- The student volunteer chairs, Claudia Borg, Desmond Elliott, and Juntao Yu, went through many applications, selected the student volunteers, and assigned them their tasks.
- The visa chairs Claudia Borg and Yufang Hou helped conference participants to obtain their visas.
- The Technical Infrastructure Chairs, Wei Liu and Sungho Jeon, enabled us to navigate through the program with ease via MiniConf and to discuss via Rocket.Chat.
- The entire program committee, senior area chairs, area chairs, reviewers, and best paper committee, was essential for ensuring our high-quality scientific program.
- We couldn't run our conference without our student volunteers. A big thanks to all of them!
- Finally, I'd like to thank our invited speakers, Mirella Lapata and Hinrich Schütze, and the Karen Spärck Jones Award Winner 2023, Hongning Wang, for delivering inspiring keynote speeches.

The online side of our hybrid conference was provided by Underline (Sol Rosenberg, Damira Mrsic, and their team), who also provided us with support for managing the entire conference.

I would like to thank our sponsors for funding the conference, providing subsidies for students and financing the diversity and inclusion initiative.

Enjoy EACL 2024! Insellimkom,

Michael Strube
Heidelberg Institute for Theoretical Studies, Heidelberg, Germany

EACL 2024 General Chair

Message from the Program Chairs

Welcome to the 18th Conference of the European Chapter of the Association for Computational Linguistics (EACL) to take place in Malta. As with last year, the conference is being held in a hybrid mode, with both audiences and presenters able to attend online. Presentation videos, slides and posters will all be available online to make the experience as good as possible. However, we're very happy to see that most presenters in oral and poster sessions are opting to be there in-person, so we're looking forward to an interactive and exciting conference.

Submission and Acceptance

EACL 2024 was the first *ACL Conference to accept all submissions via ACL Rolling Review (ARR). This brought some significant advantages: a consistent system across *ACL conferences, as well as the experience and assistance of the ARR team, and of course the ability to revise and resubmit papers rather than just being rejected out of hand.

However, this change does make it somewhat more difficult to calculate acceptance rates. Most papers committed to EACL 2024 came from the ARR October 2023 cycle, and most papers in that cycle were intended for EACL 2024; but some EACL papers came from other ARR cycles; and some papers in the October 2023 cycle were intended for other, later conferences rather than EACL. Many authors indicated their target when submitting to ARR, but not all; and some change their minds.

In the end we opted for the following approach: we take the pool of potential candidates as being papers in the relevant ARR cycle that either selected EACL as a target, did not select any target conference, or selected another target conference but then committed to EACL anyway; together with papers from other ARR cycles that committed to EACL. We include those that withdrew after getting reviews, but not those that withdrew before or were desk-rejected.

In total, EACL 2024 ARR October cycle received 1,275 submissions, with a large portion (78%) being long as opposed to short papers. 52 papers were desk rejected for various reasons (e.g. breaching the ACL anonymity or multiple submission policy, significant formatting violations) and 17 were withdrawn by the authors before reviews were received. 474 papers then committed to EACL 2024, of which we accepted 226 to the main conference, and a further 163 to the Findings of the ACL. The pool of potential candidates as defined above numbered 1,114 papers, giving an overall acceptance rate of 20.3% to the main conference and 14.5% to Findings. This is comparable to other recent *ACL conferences (EACL 2023 quoted 24.1% and 17.2% respectively), but it's hard to compare directly given such a significant change in the submission process. The conference programme also features three papers from the Transactions of the Association for Computational Linguistics (TACL) journal, and one from the Computational Linguistics (CL) journal.

Presentation Mode

From the resulting total of 230 papers accepted to the conference, we invited 144 to be presented orally, with the others presenting in poster sessions. We made the decision on which papers would be invited for oral poster presentations based on several factors: recommendations by Senior Area Chairs (SACs) and meta-reviewers about presentation mode and best paper prize potential, grouping of papers into thematic sessions, and confirmation from authors that they planned to attend the conference in person. For TACL and CL papers, the authors' preference of presentation mode was used.

Authors of papers accepted to the Findings of the ACL could opt to present a poster, and 113 (69%) chose to do so. We also gave oral paper presenters the option to present a poster, with 37 (25%) choosing to do so; this gave a total of 232 posters being presented at the conference. All oral sessions are being held as in-person plenary sessions (although with some online presenters), and all poster sessions are in-person except one fully virtual poster session.

Limitations Section

As in EACL 2023, and now standard practice in ARR, we required inclusion of a Limitations section, including all major limitations of the work. As with past events, this is intended to discourage the practice of hyping conclusions drawn in work published at EACL, sticking to better scientific practice.

Areas, Programme Committee Structure and Reviewing

We divided submissions into 24 distinct areas and asked authors to choose the most appropriate area to submit their work to. The three areas to receive the largest number of submissions were NLP Applications, Resources and Evaluation, and Interpretability and Analysis of Models for NLP.

Senior members of the NLP community were directly invited to act as Senior Area Chair (SAC), with 2–3 SACs per area. Area Chairs (ACs) were then recruited partly from ARR’s existing pool, and partly invited directly by SACs to sign up to ARR for the October cycle so they could act as Area Chairs for EACL. In the ARR system, ACs assign themselves to areas and can specify a maximum load, ensuring that ACs can reduce the number of papers they are responsible for at appropriate times; this results in a higher number of ACs than is usual outside of the ARR system. In total, 485 ARR ACs signed up to the October cycle 2023, while a total of 5,854 reviewers indicated availability to review in ARR October cycle. Three reviewers and one AC were automatically assigned to each paper using ARR’s matching algorithm, based on reviewers’ past publications and the maximum load set by reviewers and ACs.

Best Paper Awards

Following ACL policy, we set up a committee to decide the Best Paper Awards. The committee was given 28 papers by the Program Chairs to consider, papers that were identified by at least one of the program committee, SAC, AC or reviewer as a possible best paper. These papers were anonymized via black out of author information, links to code, and acknowledgements sections in the camera ready papers. The selected best papers and runners up will be announced at the conference.

Ethics Committee

We also set up an ethics committee, so that papers flagged by reviewers or ACs as having potential ethical concerns could be sent for separate ethics review. A small number of papers were accepted conditional on final re-reviewing to check that outstanding concerns were dealt with in the final camera ready paper; we’re happy to confirm that all such papers were accepted.

Keynotes

We are delighted to include 2 Keynote talks in the plenary sessions:

- Prof. Mirella Lapata: Prompting is **not** all you need! Or why Structure and Representations still matter in NLP
- Prof. Hinrich Schütze: Quality Data for LLMs: Challenges and Opportunities for NLP

Furthermore, we include a lecture from the winner of this year’s Karen Spärck Jones Award:

- Prof. Hongning Wang: Human vs. Generative AI in Content Creation Competition: Symbiosis or Conflict?

Thank Yous

EACL 2024 would not have happened without the help and support of the NLP community. So much of the event relies on voluntary efforts with people very generously giving their time and energy. We would like to acknowledge everyone involved, with a special thanks to:

- EACL 2024 General Chair, Michael Strube, for leading the overall conference organisation and providing advice and support to the PCs and many others through the conference preparations;
- Our 56 Senior Area Chairs, who did a fantastic job of managing the review process for their individual areas;
- The 485 Area Chairs, who put in an enormous effort in as much as possible ensuring papers were given the best consideration by reviewers;
- All the reviewers, who very generously give up their time to this process;
- The Best Paper Award Committee, and especially the chair Barbara Plank, with the difficult task of choosing winners from the large number considered for this award;
- Our Ethics Committee, especially the chairs Annemarie Friedrich and Anne Lauscher, for diligently checking and maintaining the high ethical standards we strive for at *ACL conferences;
- Publicity Chairs, Miryam de Lhoneux, Sungho Jeon and Yuval Pinter, and Website Chairs Mladen Karan and Wei Zhao, for managing our communications and fulfilling all requests sent so quickly;
- Publications Chairs, Danilo Croce and Gözde Gül Şahin, and Handbook Chair Marco Polignano, for the many hours dedicated to producing our fine proceedings and handbook;
- Jordan Zhang for invaluable assistance with building the conference schedule;
- The ARR team, particularly Tamar Solorio, Lilja Øvrelid and Harold Rubio, for so much support and advice during the review process;
- Damira Mršić from Underline and the ACL's Jennifer Rachford for their huge efforts to make EACL a success both online and on-site.

Overall, everyone we came into contact with during the process was exceptionally professional and great to work with, thank you all for this, it is so important!

We're looking forward to a great EACL 2024, we hope you enjoy it and we look forward to seeing you there.

Yvette Graham (Trinity College Dublin)

Matthew Purver (Queen Mary University of London & Jožef Stefan Institute)

EACL 2024 Programme Committee Co-Chairs

Message from the Local Chair

Dear EACL2024 Participants,

It is with immense joy that I welcome you to the EACL2024 conference, held in the heart of the Mediterranean - Malta, an island nation celebrated for its vibrant diversity and intricate history.

We are brought together by a common passion, that of processing language. We are in a privileged position to understand the power of language, that of connecting people. But one of the most fascinating aspects of human language is its diversity. Take Maltese as an example: a Semitic language, written in Latin script, with mixed influences from Arabic, Italian and English. Since becoming an official European language, Maltese has been given more visibility, facilitating the creation of digital resources. Yet it is still a low-resource language, ranking lowest amongst all official EU languages.

In the era of LLMs and GPUs, the opportunity to work with a low-resource language like Maltese is not just about finding creative ways of processing the language, but becomes an interesting dive into its roots and understanding how history shaped it over time. It goes beyond racing for better accuracy and F1 scores. Instead, we try to find ways of connecting the language of today with the roots of its past.

As we embark on this exciting week, I invite you to immerse yourself not only in the groundbreaking research and discussions but also in the rich tapestry of Maltese culture and language. Let the diversity of Malta inspire you, spark your curiosity, and enrich your experience during your stay.

I extend my heartfelt gratitude to the local organisation team, particularly Stephanie Abela Tickle and her colleagues at Meet360. Their dedication and hard work have been pivotal in bringing this conference to life. I also thank my colleagues and students at the University of Malta for their steering work.

In closing, I hope that EACL2024 will be a source of inspiration and collaboration for all.

Merħba f' Malta!

Claudia Borg
University of Malta

Local Chair, EACL 2024

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Michael Strube, Heidelberg Institute for Theoretical Studies

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Matthew Purver, Queen Mary University of London & Jožef Stefan Institute

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Zeerak Talat, Simon Fraser University

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Mike Zhang, IT University Copenhagen

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Desmond Elliott, University of Copenhagen

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Yufang Hou, IBM Research Ireland

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Yulia Grishina, Amazon Development Center Germany

Junyi Jessy Li, University of Texas, Austin

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Dialogue and Interactive Systems

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Summarization

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Mohit Bansal, University of North Carolina at Chapel Hill

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Shujian Huang, Nanjing University

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Ethics and NLP

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Cagri Coltekin, University of Tuebingen

Kai-Wei Chang, University of California

Efficient/Low-resource methods in NLP

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Roi Reichart, Technion, Israel Institute of Technology

Information Extraction

Qipeng Guo, Shanghai AI Laboratory

Rodrigo Agerri, University of the Basque Country

Information Retrieval and Text Mining

Zhiyuan Liu, Tsinghua University

Sophia Ananiadou, University of Manchester

Eugene Agichtein, Amazon and Emory University

Interpretability and Model Analysis in NLP

Dieuwke Hupkes, Facebook
Elena Voita, FAIR at Meta AI and University of Amsterdam

Resources and Evaluation

Valerio Basile, University of Turin
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Steven Bird, Charles Darwin University
Yang Feng, Institute of Computing Technology, Chinese Academy of Sciences

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Diarmuid Ó Séaghdha, Apple
Karin Verspoor, Royal Melbourne Institute of Technology
Shuai Wang, Amazon

Question Answering

Alessandro Moschitti, Amazon Alexa AI
Yansong Feng, Peking University

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Semantics - Lexical

Jose Camacho-Collados, Cardiff University
Chris Brew, Lexis Nexis

Semantics - Sentence-level Semantics, Textual Inference and other areas

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Sentiment Analysis, Stylistic Analysis and Argument Mining

Xuanjing Huang, Fudan University
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Phonology, Morphology, and Word Segmentation

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Francis M. Tyers, Indiana University

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Karen Spärck Jones Award Lecture
Human vs. Generative AI in Content Creation Competition:
Symbiosis or Conflict?

Hongning Wang

Department of Computer Science and Technology, Tsinghua University



Mon, March 18, 2024 – Time: 09:30 – 10:30 – Room: Radisson

Abstract: The advent of generative AI technology produces transformative impact on the content creation landscape, offering alternative approaches to produce diverse, good-quality content across media, thereby reshaping the ecosystems of online content creation and publishing, but also raising concerns about market over-saturation and the potential marginalization of human creativity. Our recent work introduces a competition model generalized from the Tullock contest to analyze the tension between human creators and generative AI. Our theory and simulations suggest that despite challenges, a stable equilibrium between human and AI-generated content is possible. Our work contributes to understanding the competitive dynamics in the content creation industry, offering insights into the future interplay between human creativity and technological advancements in generative AI.

Bio: Dr. Hongning Wang is now an associate professor at the Department of Computer Science and Technology at Tsinghua University. Prior to that, he was the Copenhaver Associate Professor in the Department of Computer Science at the University of Virginia. He received his PhD degree in computer science at the University of Illinois at Champaign-Urbana in 2014. His research generally lies in the intersection among machine learning and information retrieval, with a special focus on sequential decision optimization and computational user modeling. His work has generated over 100 research papers in top venues in data mining and information retrieval areas. He is a recipient of 2016 National Science Foundation CAREER Award, 2020 Google Faculty Research Award, and SIGIR'2019 Best Paper Award.

Keynote Talk
**Quality Data for LLMs: Challenges and Opportunities for
NLP**

Hinrich Schütze

Center for Information and Language Processing, LMU Munich



Tue, March 19, 2024 – Time: 09:00 – 10:00 – Room: Radisson

Abstract: That the recent LLM breakthroughs are solely due to scaling is a myth. Many difficult research problems had to be solved to make models like GPT4 and Mixtral possible. One of those difficult research problems is data quality. Data quality is a great challenge for NLP researchers with many opportunities for innovation and impact on current generative AI developments. I will focus on two examples in my talk: quality data for training a highly multilingual language model and quality data for instruction tuning.

Bio: Hinrich Schuetze is Professor at the Center for Information and Language Processing at LMU Munich. His lab is engaged in research on multilinguality, representation learning and linguistic analysis of NLP models. His research has been funded by NSF, the German National Science Foundation and the European Research Council (ERC Advanced Grant), inter alia. Hinrich is coauthor of two well-known textbooks (Foundations of Statistical Natural Language Processing and Introduction to Information Retrieval), a fellow of HessianAI, ELLIS (the European Laboratory for Learning and Intelligent Systems) and ACL (Association for Computational Linguistics) and (co-)awardee of several best paper awards and the ACL 2023 25-year test of time award.

Keynote Talk
Prompting is **not all you need! Or why Structure and
Representations still matter in NLP**

Mirella Lapata
School of Informatics, University of Edinburgh



Wed, March 20, 2024 – Time: 14:45 – 15:45 – Room: Radisson

Abstract: Recent years have witnessed the rise of increasingly larger and more sophisticated language models (LMs) capable of performing every task imaginable, sometimes at (super)human level. In this talk, I will argue that there is still space for specialist models in today’s NLP landscape. Such models can be dramatically more efficient, inclusive, and explainable. I will focus on two examples, opinion summarization and crosslingual semantic parsing and show how these two seemingly unrelated tasks can be addressed by explicitly learning task-specific representations. I will show how such representations can be further structured to allow search and retrieval, evidence-based generation, and cross-lingual alignment. Finally, I will discuss why we need to use LLMs for what they are good at and remove the need for them to do things that can be done much better by smaller models.

Bio: Mirella Lapata is professor of natural language processing in the School of Informatics at the University of Edinburgh. Her research focuses on getting computers to understand, reason with, and generate natural language. She is the first recipient (2009) of the British Computer Society and Information Retrieval Specialist Group (BCS/IRSG) Karen Spärck Jones award and a Fellow of the Royal Society of Edinburgh, the ACL, and Academia Europaea. Mirella has also received best paper awards in leading NLP conferences and has served on the editorial boards of the Journal of Artificial Intelligence Research, the Transactions of the ACL, and Computational Linguistics. She was president of SIGDAT (the group that organizes EMNLP) in 2018. She has been awarded an ERC consolidator grant, a Royal Society Wolfson Research Merit Award, and a UKRI Turing AI World-Leading Researcher Fellowship.

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