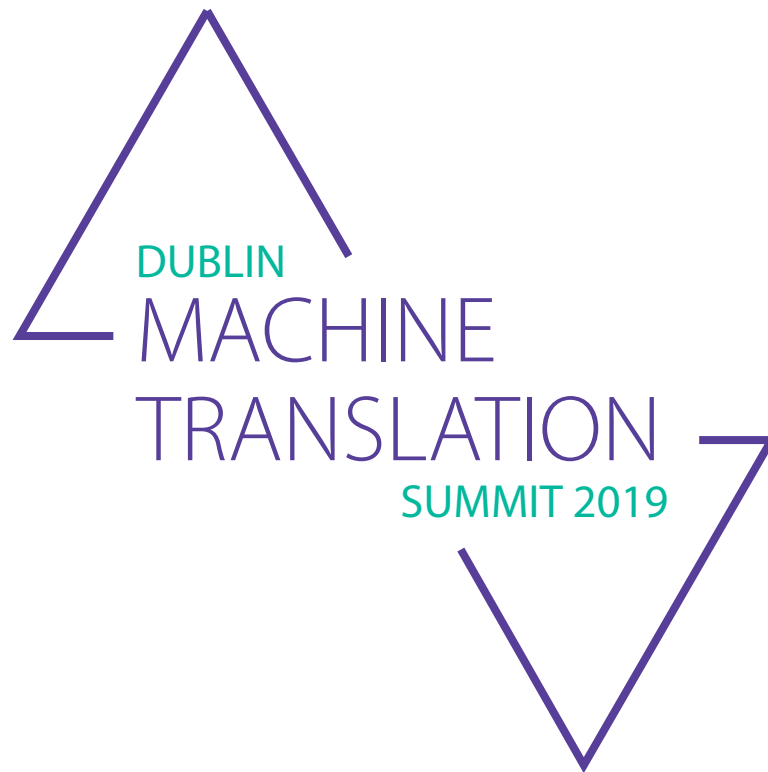


Machine Translation Summit XVII



Proceedings of Machine Translation Summit XVII Volume 1: Research Track

<https://www.mtsummit2019.com>

19–23 August, 2019
Dublin, Ireland

Proceedings of Machine Translation
Summit XVII
Volume 1: Research Track
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Foreword by the President of the IAMT and the EAMT

Céad míle fáilte romhaibh!

It's a pleasure for me to warmly welcome you all to the 17th Machine Translation Summit.

Every two years, the International Association for Machine Translation (IAMT), an umbrella organization comprising the Asian Association for Machine Translation (AAMT), the Association for Machine Translation in the Americas (AMTA), and the European Association for Machine Translation (EAMT), jointly call everyone related in some way or another to machine translation and translation technologies to the most inclusive MT conference in the world, a real Summit. It brings together senior and junior researchers, developers, vendors and all kinds of users, coming from academia, industry, or even as freelancers, to share and become aware of any new developments in the field.

This is the sixth such summit held in Europe, after having visited Munich (1989), Luxembourg (1995), Santiago de Compostela (2001), Copenhagen (2007), and Nice (2013).

The organizers have assembled an excellent programme; after two days with a wide offer of tutorials and workshops, the main conference features four tracks: the research track, the users' track, a new translators' track, and the usual projects track, and includes three invited talks, poster sessions and oral sessions. Everyone will find something going on that interests them throughout the event.

Every six years, the EAMT organizes the MT Summit in Europe. The EAMT is a growing association, which organizes a yearly conference, sponsors research, development and community outreach initiatives, and annually grants a Best Thesis Award. Individuals, institutions and companies from Europe, Africa and the Middle East can join the EAMT for a modest fee and benefit from all these activities. In addition to that, EAMT members (as AMTA and AAMT members) enjoy attractive discounted fees when attending EAMT, AMTA and AAMT conferences. This is possible thanks to our members but especially to my colleagues in the EAMT Executive Committee —coming from both academia and industry— who work hard to make it all happen.

The XVII MT Summit would not be possible without the hard work of our local organizers, headed by my predecessor as EAMT president and current Executive Board member, Andy Way, who have, with the help of other MT actors from the Adapt Centre and the professional collaboration of Abbey Conference & Events, put together an excellent conference. I am very thankful for their hard work and for having put their local MT expertise at the disposal of the EAMT (and the IAMT).

Bainigí taitneamh as, that is, enjoy. Enjoy the programme, the company, and the city. Ten years ago, I lived here and worked here for a year and I'll miss it every day of my life. And I'll tell you something: it is especially the local people that makes Dublin —and all of Ireland— one of the best places in the world to hold a conference like our Summit. I'm sure you'll bring home sweet memories of it!

Baile Átha Cliath/Dublin, Lúnasa/August 2019

Mikel L. Forcada

President of the IAMT and the EAMT

Professor of Computer Languages and Systems Universitat d'Alacant

Alacant, Valencian Country, Spain.

Email: mlf@ua.es

Foreword by MT Summit 2019 Conference Chair

Back in 2017, on behalf of the International Association for Machine Translation (IAMT), the European Association for Machine Translation (EAMT) entrusted me with hosting this conference that you are currently attending.

While I was grateful for the trust shown in me, as a previous IAMT/EAMT president, I was acutely aware of the need to deliver; compared to our annual EAMT conferences, MT Summits provide us with the opportunity to show our Asian and American friends and colleagues that we can put on an event that all three regional associations and the IAMT can be duly proud of; if you mess up, Europe has to wait 6 years to try to put it right!

After two years of hard work, I can say with some confidence that we have achieved this. One of the first things I did was put together a very strong support team. I would really like to thank our seven co-chairs of the four tracks, namely:

- Research track co-chairs: Barry Haddow & Rico Sennrich (University of Edinburgh, UK)
- User track co-chairs: John Tinsley (Iconic Translation Machines, Ireland) & Dimitar Shterionov (ADAPT Centre, Dublin City University, Ireland)
- Translator track co-chairs: Celia Rico (Universidad Europea de Madrid, Spain) & Federico Gaspari (ADAPT Centre, Dublin City University, Ireland)
- Projects chair: Mikel L. Forcada (Universitat d'Alacant, Spain)

I am also very grateful to Laura Rossi (Lexis Nexis, The Netherlands) and Antonio Toral (University of Groningen, The Netherlands) for acting as excellent Tutorials and Workshops Chairs, respectively. I hope you all benefited from attending these pre-conference events!

For the most part, it is these 9 individuals who have put together the programme assembled before you. Each of them will comment on their Tracks later in these proceedings, but they all deserve our heartfelt thanks, as do the panels of reviewers they assembled which helped improve all our papers. From a personal point of view, I am delighted that we have – for the first but surely not the last time – included a Translator track; I have advocated for some time now that it is only through dialogue that MT developers and the translator community can advance our field. I have been very keen to take up a number of recent opportunities to speak at translator conferences, so I am especially pleased to welcome translators to this event; thank you for coming!

I am of course grateful to everyone who submitted a paper; whether your work was selected for presentation or not, if no-one had submitted, we wouldn't have had a conference. For those of you whose work was selected for presentation, many thanks for coming to Dublin, and to DCU, which have been my home and workplace now for 28 years, half my life. All of you would have interacted via EasyChair, and I am grateful to Carol Scarton, EAMT secretary, for her effort in setting up the various accounts which enabled the submission and notification processes to run so smoothly.

When you act as IAMT/EAMT president, or edit the Machine Translation journal, or act as track chair at major conferences, sometimes you have to be a bit of a pain, because you are often asking busy people to do things, mostly for free! Having been around the block a few times, I have lots of contacts in the industry, so I made myself responsible for bringing in sponsorship. I know they will say I was close to pestering them on many occasions, but I am truly grateful for the hugely generous support we obtained from our sponsors from the translation and CAT industry:

- Silver sponsors: Microsoft, and STAR
- Bronze sponsors: Pangeanic, text & form, CrossLang, Flitto, VistaTec

- Other sponsors: Welocalize, Iconic, XTM, Unbabel, DCU, ELRA, Tilde, Springer, Apertium

I am also extremely grateful to Fáilte Ireland for their generous support of this conference, which helped my ADAPT@DCU colleagues Joss Moorkens and Sharon O'Brien present our bid in Nagoya in 2017, as well as supporting our excellent invited speakers: Laura Casanellas, Helena Moniz, and Arianna Bisazza. With many women in our team, it's extremely important to have strong female role models, and we could not have asked for better from Laura, Arianna and Helena; many thanks to all of you for agreeing to share your expertise with us!

We took the decision a while back to try to be as green a conference as possible. You will already have noticed that, in order to reduce waste, there is no delegate bag. To reduce paper, we are not producing paper proceedings, and the normal programme booklet has been replaced by a smaller 'bradge' which doubles as a name badge. We are hoping to have a tree-planting ceremony during the conference in order to reduce the carbon footprint of the Summit. To reduce transport costs, we are using onsite accommodation at DCU, and will promote the use of public transport to the off-site events. Thanks to DCU Sustainability Manager Sam Fahy for her support in these efforts.

While we decided not to produce printed proceedings, they still needed to be put together in electronic form. I am grateful to Jenny Walsh for producing such an excellent conference logo, but huge thanks are due to Alberto Poncelas for putting together the proceedings, and for helping workshop chairs to produce theirs. Alberto has also liaised with Matt Post to ensure that your papers are indexed in perpetuity on the ACL Anthology!

I have two final people to thank. Firstly, I am very grateful to Grainne McQuaid and her team in Abbey Conference and Events for their professional support of the conference. You will have met them at registration, and they are available throughout the event to ensure your needs are met. We have been engaging with them for 2 years now, and this has been a true partnership that has made this journey an enjoyable one. Secondly, I am especially grateful to my colleague Jane Dunne, for managing the planning of the conference, and for managing me too. Jane has done this over and above her work on a European project, and I could not have chosen a better, nicer person to engage with over these past two years – thank you Jane on behalf of everyone; we are all deeply grateful for your huge effort in getting us to where we all are today!

Finally, I really hope that you all enjoy the conference, that you benefit from the excellent programme that has been assembled, and that you go away from here having made new friends. I am fortunate indeed that many of my very best friends are in the MT community, and I hope to meet as many of you as possible during the event.

Andy Way

Chair, MT Summit 2019

Deputy Director ADAPT Centre School of Computing Dublin City University
Dublin, Ireland.

Email: Andy.Way@adaptcentre.ie

Foreword by the Research Track Program Chairs

It is with great pleasure that we present the proceedings of the research track at MT Summit XVII. We solicited full papers that present novel research contributions across all areas of MT, particularly encouraging submissions that are oriented towards building robust and practical systems.

We received 57 submissions for the research track. Out of these, 1 was withdrawn before the notification of acceptance, and 31 were accepted (54%). 4 were withdrawn after the notification of acceptance, resulting in 27 papers being presented at the MT Summit.

The selected papers span a wide range of topics in machine translation. Major themes include translation from other modalities than text, especially speech, the analysis of MT models and automatic translations, and the integration of MT into translation workflows, with studies on post-editing and constrained/controllable MT.

We would like to thank the members of the Program Committee for their timely reviews.

Barry Haddow and Rico Sennrich

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