at4ssl 2025

AT4SSL

Third International Workshop on Automatic Translation for Signed and Spoken Languages (AT4SSL)

Proceedings of the Workshop

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Message from the Organising Committee

This volume contains the proceedings of the Third International Workshop on Automatic Translation for Signed and Spoken Languages (AT4SSL 2025)[1], collocated with the 20th Machine Translation Summit[2]. For a third time, this one-day workshop provides a platform for researchers and practitioners with background and expertise in sign language linguistics, machine translation, natural language processing, interpreting, image and video recognition, virtual signers synthesis, usability, ethics and others to present and discuss (complete, ongoing or future) research on automatic translation between signed and spoken languages.

AT4SSL 2021 & AT4SSL 2023 The first edition of the AT4SSL workshop[3] was co-located with the AMTA conference in 2021. The workshop was conducted online and was attended by approximately 35 participants. The goal of the first edition of the workshop was to discuss the dichotomy between the fields of machine translation and sign language processing (including SL linguistics, image and video recognition, etc.) and to promote the communication and collaboration between researchers from different (sub)fields aiming at a common goal. The second edition of AT4SSL was co-located with the EAMT 2023 conference. This edition was conducted face-to-face. The main theme of the 2023 edition of the AT4SSL workshop was SL data (as data being one of the key factors for the success of today's AI).

Submissions and programme As with the previous editions, the AT4SSL 2025 welcomed two types of contributions: long and short research papers. We received a total of 6 new submissions (all of which long papers). Following the peer-review process, 4 submissions were accepted, resulting in an acceptance rate of 67%.

The accepted papers cover diverse topics. The paper by Amit Moryossef, Gerard Sant and Zifan Jiang describes a method to alter the appearance of a signer (in a recorded or digitised signed utterance) using pose estimation and a generative adversarial network (GAN). This work aids the task of anonymising signed language videos. The work of Bastien David, Pierrette Bouillon, Jonathan Mutal, Irene Strasly, Johanna Gerlach and Hervé Spechbach contributes with a new parallel sign language translation corpus in the medical domain. This corpus includes French (as source language), LSF-CH videos (as target) and the G-SiGML code to those LSF-CH videos. The G-SiGML is automatically generated using the SIGLA[4] rule-based system. Naiara Gamendia, Horacio Saggion and Euan McGill present in their paper novel approaches for Spontaneous Isolated Sign Language Recognition for Catalan Sign Language (LSC) along with the first dataset of isolated signs derived from an available LSC corpus. In contrast to the aforementioned three works, the one of Lisa Lepp, Mirella De Sisto and Dimitar Shterionov looks into, on the one hand, the user and, on the other hand, the (typical) machine translation pipeline and its phases. Based on existing literature (111 articles), it uncovers the amount of users and their roles in each of the typical phases of a machine translation project, aiming to provide more insights on user-involvement and co-creation in SLMT projects.

AT4SSL 2025 features Gomèr Otterspeer as keynote speaker. Gomèr Otterspeer, a Software Engineer at the SignLab team at the University of Amsterdam, is one of the Deaf team members of the SignLab with primary role in collaboration with researchers to co-create technology, raise awareness about Deaf culture, and promote the use of Sign Language through programming and advisory roles in related projects. The keynote presentation features a novel project on translating text to SL for patient leaflets. The research specifically focuses on reusing existing SL animation videos, replacing only one sign or a short sequence within a sentence, ensuring efficient and consistent communication.

[1] https://sites.google.com/tilburguniversity.edu/at4ssl2025
[2] https://mtsummit2025.unige.ch/
[3] https://aclanthology.org/volumes/2021.mtsummit-at4ssl/
[4] https://babeldr.unige.ch/demos-and-resources#sigla

Acknowledgments This workshop is sponsored by Tilburg University's Cognitive Science and Artificial Intelligence (CSAI) department,[5] the Sector Plan for Social Sciences and Humanities,[6] theme Human AI & Datafied Society and SignLab[7] at the University of Amsterdam.

We sincerely thank everyone that contributed to and supported this edition of the AT4SSL workshop: the authors of the submitted papers for their interest in the topic, the Programme Committee members for their valuable feedback and insightful comments, the CSAI department (TiU) and the SIgnLab (UvA), and the MT Summit organizers, with special thanks to Ms Lise Volkart and Dr Sabrina Girletti.

We hope you enjoy reading the papers and we are looking forward to a fruitful and enriching workshop!

Dimitar Shterionov
Mirella De Sisto
Bram Vanroy
Vincent Vandeghinste
Victoria Nyst
Myriam Vermeerbergen
Floris Roelofsen
Lisa Lepp
Irene Strasly

[5] https://www.tilburguniversity.edu/about/schools/tshd/departments/dca
[6] https://www.sectorplan-ssh.nl
[7] https://www.signlab-amsterdam.nl/

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Keynote Talk

Blending Sentences with Avatar Advanced Sign Language Animation Technology

Gomèr Otterspeer
SignLab, University of Amsterdam

Abstract: In this talk, we explore how automatic translation from written text to Sign Language of the Netherlands (NGT) can be effectively applied in contexts requiring large volumes of accessible information, such as the medical sector. Patient leaflets, for example, often contain thousands of sentences that differ only slightly from one another. Our research specifically focuses on reusing existing sign language animation videos, replacing only one sign or a short sequence within a sentence, ensuring efficient and consistent communication.

For example:

Original Sentence	Variation Example
1 in 10,000 people experience a serious side effect (n=100)	1 in 10,000 people experience a headache.
1 in 10,000 people experience a serious side effect (n=100)	1 in 100 people experience a serious side effect.

Our approach involves processing sign language sentences captured using motion capture technology. These captured motions are then applied to avatars created with Ready Player Me to generate animated videos, which are displayed in our Babylon 3D viewer tool. To accurately identify and segment specific signs within sentences, we utilize a semi-automated annotation tool. This annotation allows for precise and natural replacement of targeted segments within sign language video clips.

Subsequently, we validate our method by conducting focus group sessions. Participants in these groups perform blind tests, viewing various sentences and determining whether each sentence is a naturally recorded video or a hybrid composition. This ensures that our automated sign replacement maintains clarity, naturalness, and user comprehension.

This is a promising method for scalable, efficient, and user-friendly sign language translation, bridging accessibility gaps through careful integration of annotation technology, motion capture, and attention to visual grammar and user feedback.

Bio: Gomèr Otterspeer is currently employed as a Software Engineer in the SignLab team at the University of Amsterdam. He is one of the Deaf team members of the SignLab with primary role in collaboration with researchers to co-create technology, raise awareness about Deaf culture, and promote the use of Sign Language through programming and advisory roles in related projects.

Since 2024, Gomèr work is focused on specialized areas including Artificial Intelligence (AI), Motion Capture, and Dataset Management. Over the past year, the SignLab team he is part of has collected an extensive dataset consisting of more than 24,000 recordings, each captured from five distinct perspectives. Furthermore, the lab works on motion capturing with which they have collected more than 5,000 recordings.

Gomèr's current objective is to curate this data into a comprehensive dataset of the Dutch Sign Language (NGT) for publication purposes, and subsequently utilize it to train AI models aimed at automating annotation.

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