

**American Sign Language  
Linguistic Research Project**



## **What's New in SignStream® 3.5.1 ?**

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Available from: <http://www.bu.edu/asllrp/rpt27/asllrp27.pdf>

## 1 Introduction

SignStream® is available for download from <https://www.bu.edu/asllrp/SignStream/3/>. Version 3.5.1 is a minor upgrade, with a few bug fixes and new features. It now also works with MacOS 15 (Sequoia). All SignStream® users are urged to upgrade.

## 2 System Requirements

*Operating Systems:* MacOS Sequoia (15), MacOS Sonoma (14), MacOS Ventura (13), Monterey (12), Big Sur (11), Catalina (10.15), or Mojave (10.14). SignStream® 3.5.1 may also work on older versions of the MacOS.

*Hardware:*

- Mac computer with 64-bit Intel or ARM (Apple Silicon) processor
  - If you use SignStream® 3.5.1 with the ARM processor: When you double-click on SignStream® for the first time--after following all installation instructions very carefully--you will be asked to install Rosetta (which emulates the Intel instruction set) if it is not already installed. You can then double-click on SignStream again to launch it.
- 2 GB of RAM
- 250 MB of hard drive space

## 3 Installation Instructions

Please follow the directions carefully. If you are *not* upgrading from a previous version, you can skip ahead to Section 3.3.

### 3.1 Upgrading from SignStream® version 3.4.0, 3.4.1, or 3.5.0

You have two options:

- You can upgrade using the “Upgrade SignStream” command from the Help menu in SignStream. This preserves local information about annotators and participants, as well as all entries in the local Sign Bank.
- Alternatively, you can follow the instructions in the Section 3.2.

### 3.2 Upgrading from a prior version of SignStream®

You should download version 3.5.1 from the main SignStream 3 download page (as explained in Section 3.3). You can then manually copy over local files from your previous SignStream folder, as explained in Section 3.4, if you wish to preserve previous information about local annotators or participants, and/or entries from a local Sign Bank, before you launch the new application.

**Important note:** SignStream files that were last saved in a version of SignStream 3 prior to 3.3.0 cannot be opened with this current version of SignStream (3.5.1). To open such files, you will need to first open them with SignStream version 3.3.0 and save them; those saved versions will then be able to be opened with the current version of SignStream. If you do not have SignStream version 3.3.0 installed and need a link to download that version of the software for this purpose, please email Carol Neidle ([carol@bu.edu](mailto:carol@bu.edu)) for a download link. (System requirements for version 3.3.0 will be detailed in the email reply.)

### 3.3 Installing a fresh new current version of SignStream® (version 3.5.1)

The application is available for download from: <http://www.bu.edu/asllrp/SignStream/3/download-newSS.html>. Unzip the "SignStream3-latest.zip" file that will have been downloaded. That will create a folder called "SignStream3". You can move the whole folder to your desired location, **but do not move files within that folder**. Before launching the application, you must complete the steps outlined below.

**Before** launching the application, from within that folder:

- 1) You will need to allow the launch of the SignStream®3 application, despite the fact that it is not provided by Apple or certified developers (to get around security features that have been implemented in Mac Operating Systems since OS 8).
- 2) You will also be offered the opportunity to download the latest ASLLRP Global Sign Bank, which consists of a repertoire of signs, with gloss labels and annotations of other properties, as well as images and video illustration of those signs, to assist with annotation of new video files. This Global Sign Bank is not required for use of SignStream®. However, if you download the Sign Bank, you must agree to the terms of use below (which will also be downloaded to your SignStream folder).

Open a Finder window, and double-click on the SignStream folder (the folder you downloaded, which includes the application and related files). Do the following, in the order listed:

- 1) **[Required]** You will see a file called “DisableQuarantine.command”. Double-click on that. You may get a message asking if you want to open the file even though it is from an unidentified developer. If so, say YES. If you get a message that the file cannot be opened because it is from an unidentified developer:
  - a. Go into System Preferences > Security & Privacy > General
  - b. Under the section "Allow apps downloaded from" click "Open Anyway" for this file.This will open in the Terminal application and run immediately, then close itself when finished.
- 2) **[Optional]** If you wish to download the ASLLRP Global Sign Bank, double-click on "GetSignBank.command". You will be asked whether you wish to download the Sign Bank and agree to abide by the terms of use. If you click ‘yes’, the download of the ASLLRP Sign Bank materials (and Sign Bank terms of use) will commence. Close the Terminal Window.

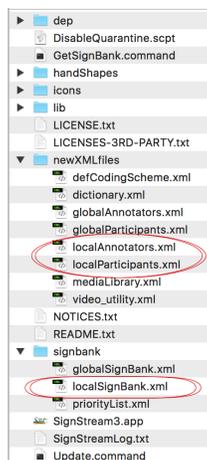
**Note: It is extremely important to be using the most current version of the global Sign Bank.**

New versions of the Sign Bank will be released in the future, and SignStream® will download new versions as they become available (alerting the user that this is to happen; see next section).

**Do not move files out of the main SignStream 3 folder.**

You will then be ready to launch SignStream® by double-clicking on the "SignStream3" file. **You can skip ahead to Section 3.5** unless you have previously used an older version of the software and wish to preserve information from that version, in which case you should follow the instructions in Section 3.4 before launching SignStream®.

### 3.4 If you do a fresh install of SignStream® 3.5.1, as explained in Section 3.3, and wish to manually copy local files from a prior SignStream® folder:



You should follow the instructions in Section 3.3, but be careful to deploy the new package to a new directory distinct from any previous SignStream directory. Then copy the following files over from your old directory to the new SignStream directory (see Figure 1) to overwrite the previous files:

signbank/localSignBank.xml  
newXMLfiles/localAnnotators.xml  
newXMLfiles/localParticipants.xml

**Figure 1. Local files to be preserved from older versions of SignStream®**

### 3.5 Note about installing SignStream® on ARM hardware

The first time you click on the SignStream® application on ARM hardware, you will be asked to install Rosetta (which emulates the Intel instruction set) if it is not already installed. Click "Install" if asked. Once that is done, double-click again on the SignStream® application to launch it.

## 4 Change in File Format as of Version 3.4.0

Starting with version 3.4.0, SignStream® files are saved with .ssc (rather than .ss3) as the file extension. One consequence of the change in file structure relative to earlier versions is that when you initially open a SignStream collection created with an earlier version of the application, a conversion to the new file format will occur, and the file will then subsequently be saved with the new file extension: .ssc. It will no longer be possible to open .ssc files with earlier versions of SignStream. The conversion process will also entail a file validation process, so please be patient while this occurs. In the event that some intervention is required by the user to ensure that the data are properly converted, such validation errors will appear in a separate window, and instructions will be provided for verifying/correcting the relevant item. You can access any such messages (if you are alerted that there were any issues) from the Help menu, as shown in Figure 2.

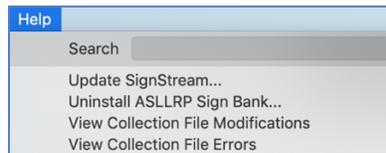


Figure 2. Any issues with the file can be viewed from the Help menu

## 5 Major Changes in SignStream® 3.5.1

### 5.1 New Enhancements to Searching

The functionality to change the search domain within the search window has been restored. On initiating a search within one collection, it is possible to switch to another collection without closing the search window, retaining the existing search query and settings. The enhanced search window is illustrated in Figure 4.

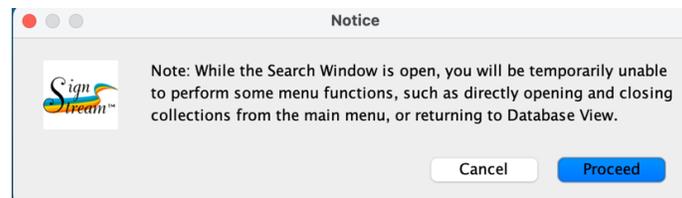


Figure 3. Dialog Box that appears when the Search Window is opened.

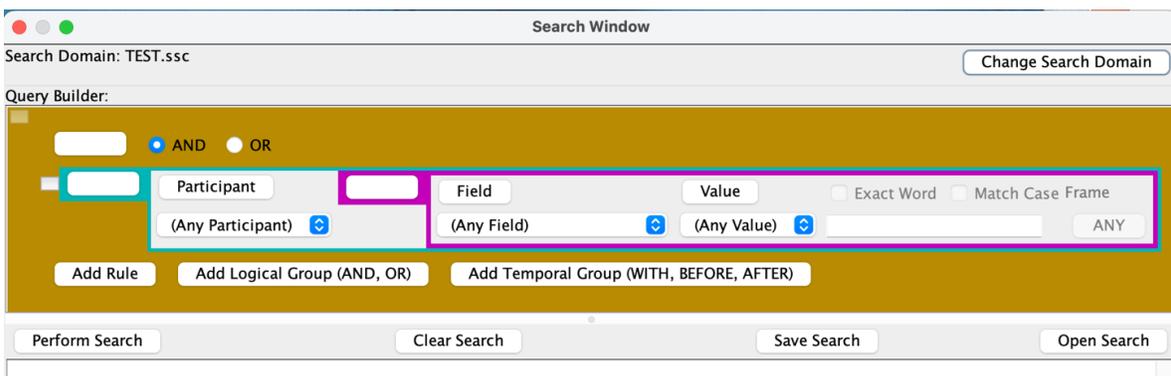


Figure 4. New, enhanced, Search Window

Note:

- It is possible to switch between any number of collections while searching, but the user can search only one at a time.
- When opening a new file from the search window, the file must be fully functional, including having video files selected (since it is not possible to re-select videos with the Search Window open).
- The ability to save searches has been added, as well. You may save a search query that you have defined to a file on your system, and then re-open that same query later by opening the saved search file.

While searching, the ability to manually open and close collections from the main menu is disallowed, as is returning to the Database View. The user is reminded of this in the Dialog Box shown in Figure 3.

## 5.2 Changes to the Use of Control and Option keys

**Important:** The operation of the Control and Option Keys has changed.

For editing non-manual items

Use of the **Option** key

- Hold the **Option** key, and click and drag to create a new nonmanual entity.
- Hover over an existing nonmanual entity; while holding the **Option** key toward the start of the entity, click and drag to set the new start time.
- Hover over an existing nonmanual entity; while holding the **Option** key toward the end of the entity, click and drag to set the new end time.

Use of the **Control** key

- While holding the **Control** key, click on an existing nonmanual entity to bring up the contextual menu.

*Unchanged:* Double click on the nonmanual entity to select a different value.

For editing gesture items: The changes described above apply also to gesture items.

For editing glosses: The **Option** key should be used to create new glosses. Option-click in the gloss field and then type the text of the gloss. The **Control** key should be used to call up the contextual menu: Control-click on the gloss to do that.

## 6 Other Changes in Version 3.5.1 Relative to 3.5.0

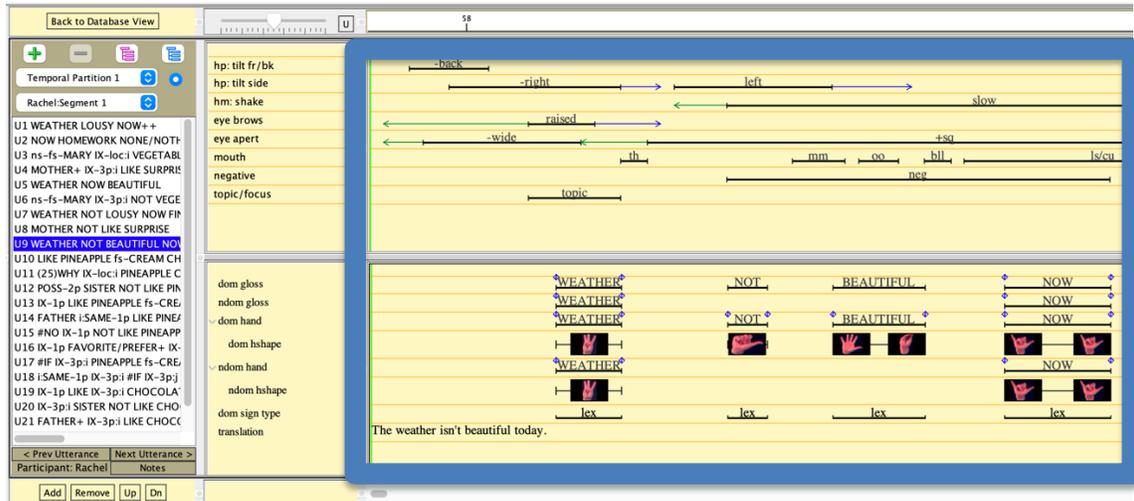
- This release now works with MacOS 15.
- A bug related to entering the text for multiple glosses at the same time has been fixed.
- When saving signs to the local sign bank, plus signs (+) at the end of a gloss indicating repetition are now stripped out before adding.
- A bug that caused nonmanual entities to have their start or end times accidentally reset (when the user control-clicks on the nonmanual entity) has been fixed.
- A bug that caused the utterance view to crash after creation of a new nonmanual field has been fixed.

## 7 Some remaining issues

### 7.1 Use of the up and down arrow keys

It was previously possible to use the up and down arrow keys to navigate to the previous or next utterance in the utterance index list on the left of the Utterance Window. However, for some reason in the versions

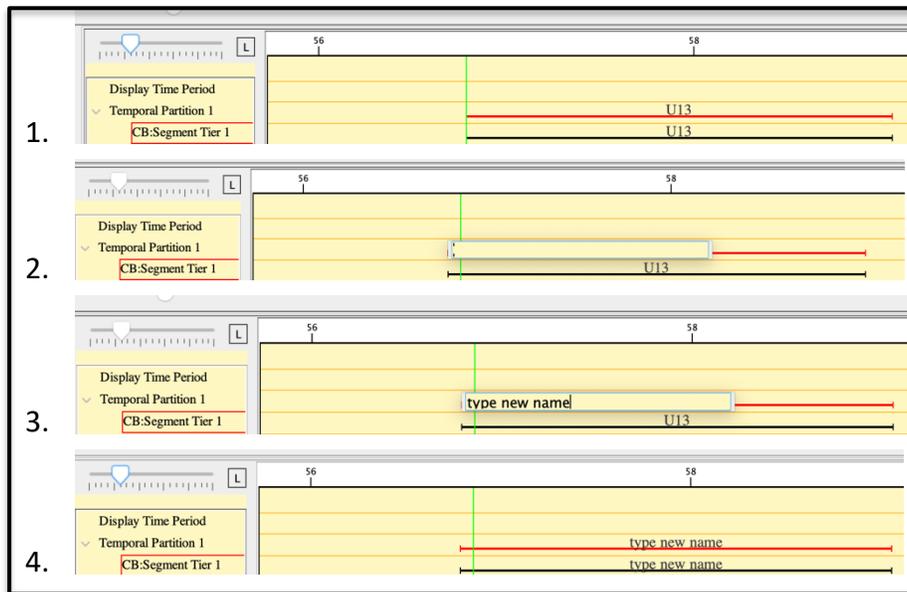
3.4.0, 3.4.1, 3.5.0 and 3.5.1, you may need to click once in the right area of the window (within the rectangle shown below) prior to using the arrow keys.



**Figure 5. To use arrow keys for navigation in Utterance Index on the left of the Utterance Window: click first within the rectangle shown.**

### 7.2 Useful Tip: To change the name of an utterance

In Database view, click once on the line representing the Utterance. It will be highlighted in red. Then, click near the left edge of that line, and hold the mouse button down until the text box appears, in which you can type the new Utterance name. Hit a carriage return to enter.



**Figure 6. How to Rename an Utterance**

### 7.3 Other known issues – to be resolved in future versions

- **Installation**

- Issues can arise when any directory on the path to your SignStream installation contains a quote character ( ' ) or a double quote character ( " ), so remove these characters from your directory names to avoid any problems.

- **Macro-Unit Settings**

- There is an inconsistency in how edits or additions to the local participant list are treated.

- **Database and Utterance Windows**

- If you hide the Utterance Window (how you do this depends on your Mac OS, e.g., by clicking on the title bar, in older OSs, or by clicking on the red button at the upper left of the window), the hidden window is not recoverable. You will need to Quit SignStream and reopen the utterance. Although you will not have access to Save File through the menus (because the Utterance Window is hidden), when you quit the program, you will be given the option to save the file. Be sure to save if you want to. Workaround: Don't hide the Utterance Window.
- The icons for zoom locking/unlocking may be duplicated momentarily upon opening a new collection.
- The Utterance Index on the left side of the Utterance View is inconsistent in its text highlighting, sometimes black text on blue background and sometimes white text on blue background.
- In the Utterance view, editing a nonmanual field value by double-clicking it to open the field value selection list and selecting a value will result in the Utterance Index list on the left incorrectly highlighting only the selected utterance (in blue) while not highlighting the visible utterances (in gray).
- The green bar location is remembered when opening or creating a collection. When switching collections, the video will start at time zero, but the green line will remain in the middle where it was for a previously opened collection. The position of the green bar is also remembered when a video file is replaced within a SignStream collection and re-displayed.

- **Having more than 1 Temporal Partition and/or Segment Tier visible in the Utterance Window**

- Utterance highlighting is not consistent when multiple segment tiers are showing in Utterance View.

- **Morph-Phon and Sign Bank Windows**

- Morph-Phon settings for a gloss can visually linger on the dialog window when opening up the Morph-Phon dialog again for a different gloss.
- Morph-Phon Window "Enter" button behavior is not consistent in when it is enabled or disabled (requiring use of the Bypass Sign Bank button to enter data).
- Currently, when you "insert all data" from the Sign Bank:
  1. Only the start and end handshapes of the sign will be inserted into the Morph-Phon Window. In case there are additional handshapes, e.g., for a loan sign, you will need to add them manually.
  2. There may be errors in the insertion of information about sign properties when entered automatically from the Sign Bank (especially in regard to sign type for name signs that have a prefix before the ns- marking, e.g., "(M)ns-text" or "(2h)ns-text"). Please be sure to verify that all information about sign properties displayed in the Morph-Phon Window is correct before entering that information into the Utterance Window.

- **Other**

- For some reason, launching SignStream® causes the Terminal Window to be activated. You should be aware of this, although it should not cause any issues.

## 8 Other functionalities remaining to be incorporated in future versions

- **General**

- Making it possible to see handshapes that are not fully visible by hovering over the handshape
- Making SignStream menus fully available when a window other than the Utterance Window is active
- Implementation of Cut/Paste/Undo functionality
- Enabling paste to work in window for file saving
- Improving the way local information (e.g., about participants, annotators, sign bank) is dealt with

- Ability to open multiple files/windows simultaneously
- Ability to have multiple macro units in a single SignStream collection
- Reconsideration of annotator function, and button for selecting that start and end handshapes are the same or different
- Improving help functions and tooltips
- Import and export options
- Ability to deal with sound (for spoken language)
- **Database and Utterance Windows**
  - Implementation of “Display Time Period” in both **Database** and **Utterance Windows**
  - Addition of buttons to play previous event/entity
  - Restoration of arrow key functionality
- **Morph-Phon and Sign Bank Windows**
  - Resolving font display issues – in glosses and in tabs of the **Morph-Phon Window**
  - Improving the sort order of display of Sign Bank results
  - Enabling search by related English words in the Sign Bank (as is now possible online, at <https://dai.cs.rutgers.edu/dai/s/dai>)
  - Enabling more complete information about handshapes to be entered from the Sign Bank into the Morph-Phon Window when the sign is associated with more than a start and end handshape (i.e., for loan signs)
- **Search Window**
  - Adding some keyboard shortcuts to the Search Window (esp. so that Carriage Return launches the search)
- **Audio**
  - Ability to deal with audio files

## 9 NEW! Information about the SignStream®3 XML format

As of May 2025, information about the XML format is now available for download:

Gregory Dimitriadis, “SignStream®3 Collection File XML Documentation” (2025) Distributed by Carol Neidle, through the American Sign Language Linguistic Research Project (ASLLRP), from <http://www.bu.edu/asllrp/SS-XML-doc.pdf> .

This document describes the structure and outline of a SignStream®3 collection XML file, and how it relates to the application’s front-facing features from the perspective of a general user. While working with SignStream, one may wish to inspect the actual data underlying an entity being modified, or attempt to debug an error that is occurring. The collection file contains most of the information necessary to do this, and this document also provides guidance on where to find other files and resources, both within the SignStream®3 installation package and potentially externally on the Internet. With knowledge about how the data is organized in the XML (and note that multiple aspects of a single entity may be stored separately across interrelated components), it may be possible to engage in basic automated parsing and interpretation of collection files. However, we also expect to release in coming months a self-standing application that will help in extracting information directly from the XML files.

## 10 Additional Documentation

Please see the following reports from the American Sign Language Linguistic Research Project (ASLLRP) at Boston University:

- A User's Guide to SignStream® 3 **Report No. 15** Neidle, Carol (August 2017) [[pdf](#) - 24 MB],  
[http://www.bu.edu/asllrp/SignStream/3/SS\\_User-guide.pdf](http://www.bu.edu/asllrp/SignStream/3/SS_User-guide.pdf)
- What's New in SignStream® 3.1.0? **Report No. 16** Neidle, Carol (May 2018) [[pdf](#) - 14 MB]  
[http://www.bu.edu/asllrp/SignStream/3/SS\\_update.pdf](http://www.bu.edu/asllrp/SignStream/3/SS_update.pdf)
- What's New in SignStream® 3.3.0? **Report No. 17** Neidle, Carol (2020) [[pdf](#) - 14 MB]  
[http://www.bu.edu/asllrp/SignStream/3/SS\\_update-3\\_3.pdf](http://www.bu.edu/asllrp/SignStream/3/SS_update-3_3.pdf)
- What's New in SignStream® 3.4.0? **Report No. 22** Neidle, Carol (2022) [[pdf](#) – 1.6 MB]  
<http://www.bu.edu/asllrp/rpt22/asllrp22.pdf>
- What's New in SignStream® 3.4.1? **Report No. 23** Neidle, Carol (2023) [[pdf](#)– 1 MB]  
<http://www.bu.edu/asllrp/rpt23/asllrp23.pdf>
- What's New in SignStream® 3.5.0? **Report No. 26** Neidle, Carol (2024) [[pdf](#) – 1 MB]  
<https://www.bu.edu/asllrp/rpt26/asllrp26.pdf>

For information about our online, SignStream-annotated, video corpora shared through our Data Access Interface and about the ASLLRP Sign Bank, see the following, as well as the references in the next section:

- Neidle, Carol, and Augustine Opoku (2020) [A User's Guide to the American Sign Language Linguistic Research Project \(ASLLRP\) Data Access Interface \(DAI\) 2 – Version 2](#). Boston University, ASLLRP Project **Report No. 18**  
<http://www.bu.edu/asllrp/rpt18/asllrp18.pdf>
- Neidle, Carol, and Augustine Opoku (2021) [Update on Linguistically Annotated ASL Video Data Available through the American Sign Language Linguistic Research Project \(ASLLRP\)](#). Boston University, ASLLRP Project **Report No. 19** <https://www.bu.edu/asllrp/rpt19/asllrp19.pdf>
- Neidle, Carol, Augustine Opoku, and Dimitris Metaxas (2022) [ASL Video Corpora & Sign Bank: Resources Available through the American Sign Language Linguistic Research Project \(ASLLRP\)](#). *arXiv:2201.07899*. <https://arxiv.org/abs/2201.07899>
- Neidle, Carol, Augustine Opoku, Carey Ballard, Konstantinos M. Dafnis, Evgenia Chroni, and Dimitris Metaxas (2022) [Resources for Computer-Based Sign Recognition from Video, and the Criticality of Consistency of Gloss Labeling across Multiple Large ASL Video Corpora](#). *10th Workshop on the Representation and Processing of Sign Languages: Multilingual Sign Language Resources. LREC, Marseille, France*. European Language Resources Association (ELRA). BU Open Access: <https://hdl.handle.net/2144/45152>
- Neidle, Carol, and Augustine Opoku (2023) [Documentation for Download of ASLLRP Signs Segmented from Continuous Signing Corpora](#). Boston University, ASLLRP Project **Report No. 24**  
<https://www.bu.edu/asllrp/rpt24/asllrp24.pdf>
- Neidle, Carol, and Augustine Opoku (2024) [A Guide to the ASLLRP Sign Bank – New Search Features](#). Boston University, ASLLRP Project **Report No. 25**. <http://www.bu.edu/asllrp/rpt25/asllrp25.pdf>
- Carol Neidle, Augustine Opoku, Carey Ballard, Yang Zhou, Xiaoxiao He, and Dimitris Metaxas (2024) [New Capability to Look Up an ASL Sign from a Video Example](#). *arXiv:2407.13571 [cs.CV]* pp. 1-11  
<https://doi.org/10.48550/arXiv.2407.13571>

## 11 Credits & Acknowledgments

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We have benefitted greatly from the large number of annotators over the years at Boston University who used SignStream® and shared their feedback and suggestions, including especially Carey Ballard and Indya Oliver.

The lookup-by-video-example functionality builds upon the module on our website <https://dai.cs.rutgers.edu/dai/s/signbank>. The design and implementation were carried out by Augustine Opoku, with the sign recognition relying on the research carried out by Dimitris Metaxas at Rutgers University and his students, in collaboration also with Matt Huenerfauth and colleagues at the Rochester Institute of Technology. See references here for further information about all of this:

Neidle, Carol, Augustine Opoku, Carey Ballard, Yang Zhou, Xiaoxiao He, and Dimitris Metaxas (2024) [New Capability to Look Up an ASL Sign from a Video Example](#). arXiv:2407.13571 [cs.CV] pp. 1-11. <https://arxiv.org/abs/2407.13571> .

Neidle, Carol, and Augustine Opoku (2024) [A Guide to the ASLLRP Sign Bank – New Search Features](#). Boston University, ASLLRP Project Report No. 25 <http://www.bu.edu/asllrp/rpt25/asllrp25.pdf>.

Zhou, Yang, Zhaoyang Xia, Yuxiao Chen, Carol Neidle, and Dimitris Metaxas (2024) [A Multimodal Spatio-Temporal GCN Model with Enhancements for Isolated Sign Recognition](#). LREC-COLING 2024 11th Workshop on the Representation and Processing of Sign Languages: Evaluation of Sign Language Resources, Torino, Italy. <https://www.sign-lang.uni-hamburg.de/lrec/pub/24015.pdf> .

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