

acera

User Guide

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1 Software description

acera is a DNA multiple sequence alignment tool that uses the actor of a trained Actor Critic with Experience Replay model. The software interface is devised into 3 sections (Figure 1), the first section is for loading sequences file, the second regroups operations related to the alignment, and the third section is for displaying the sequences before and after the alignment (3.a), the alignment score (3.b) and progress (3.c), the positions of the exact match (3.d) and the state of the software (3.e).



Figure 1: Segmentation of **acera**'s interface.

2 How to use

2.1 Loading sequences

The first thing to do is to load a fasta file containing the sequences to be aligned by right clicking on the button “Load”, in section 1, or the “Load sequences” from the menu “File”. The fasta file must not contain more than 3 sequences, and the maximum length of each sequence should not exceed 100 nucleotides.

2.2 Aligning the loaded sequences

After loading the fasta file the alignment is performed by right clicking on the button “Align”, in the section 2, or the “Align sequences” from the menu “Alignment”.

2.3 Stopping an alignment

The user can stop an ongoing alignment by pressing the button “Stop alignment”, in the section 2, or from the menu “Alignment”.

2.4 Saving an alignment

After an alignment is done, the user has the possibility to save it to a file by right clicking on the button “Save alignment”, in the section 2, or from the menu “File”. The alignment will be saved by the name “fasta_file_name – acera.aln” in the chosen directory.

2.5 Updating the software

The user can check if any updates are available by navigating to the menu “Help” then pressing “Check for updates”. If any updates are available, they will be downloaded and the software will close to install them. This action requires internet connection.

3 Contact

For more information or if there is any issue with the software, the user can contact us by email : m.bouskri@gmail.com or redirect to **acera**’s repository on GitHub: <https://github.com/mbouskri/acera>.