



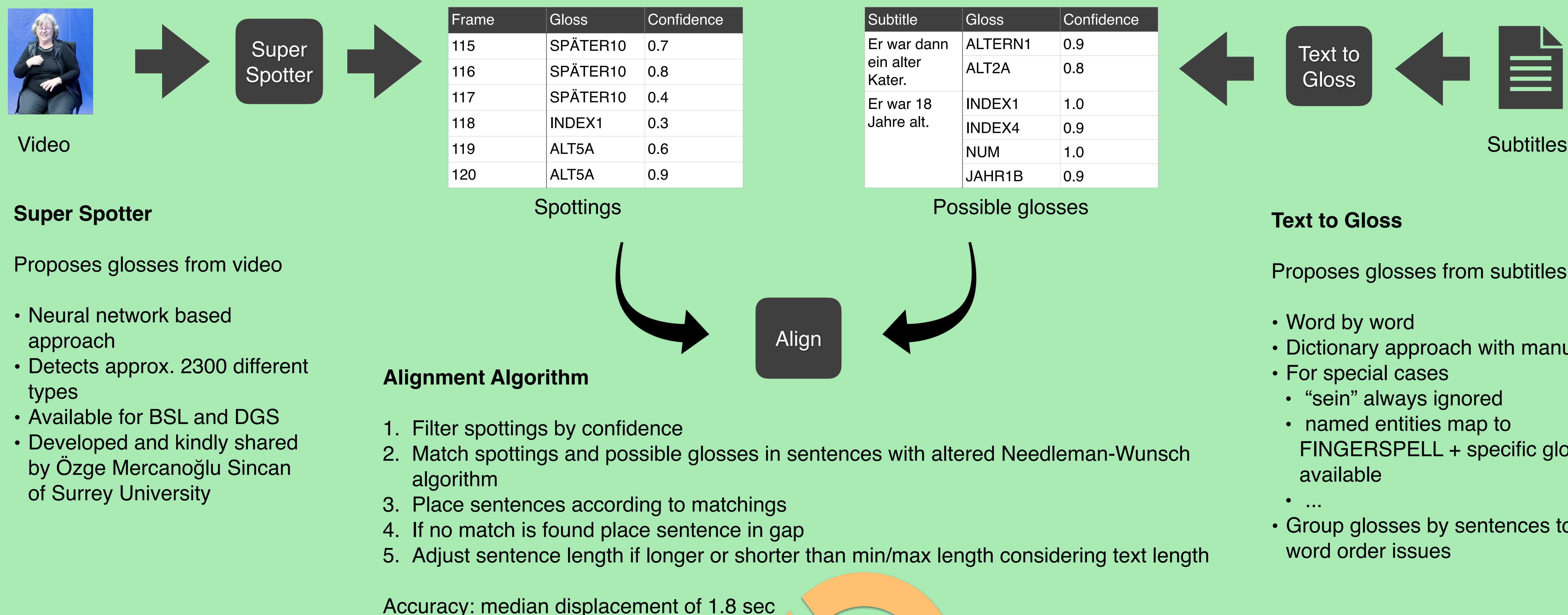
Problem:

- To provide subtitles for videos in sign language, the translation has to be aligned with the signing
- Doing this manually is time consuming but fully automatic alignment is often not accurate enough.

Our Proposal:

- Use automatically generated landmarks to aid human subtitle alignment
- Program generates an alignment proposal based on these landmarks
- User can change alignment directly but also alter, add or delete landmarks
- Program generates new alignment proposal based on the changes
- After a few feedback cycles the alignment is correct

## Automatic Alignment



## Manual Alignment

### General Functionality

- Undo / Redo changes
- Zoom in and out of timeline
- Short keys for most operations

### Landmarks

- Represented by lines
- Can be attached to words or gaps between subtitles (gray areas)
- Can alter time or word
- Black: unchecked
- Green: checked
- Red: checked but contradiction

### Subtitles

- Move subtitle: alter start, end or complete position
- Optionally push down following subtitles so nothing overlaps
- Can split and join subtitles and alter text
- Green triangles: checked
- MultiSelect possible

### Second Signer

- Shows in the timeline when the conversation partner is signing as well.
- Can switch between working on either signer in a conversation

### Video

- Show active signer and second signer or moderator
- Play whole transcript or selected subtitles
- Video size and speed adjustable

### Table

- For overview and navigation
- Green background: position checked
- Can mark everything up to current subtitle as correct

### Invoke Automatic

- Check for contradictions in positioning
- New alignment proposal based on changes

