Improving resources for interpreter training: a data-driven approach to realistic fingerspelling generation

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For interpreter training students, fingerspelling recognition is one of the last skills acquired, due to the complex nature of fingerspelling and a lack of a display technology that is sufficiently natural for recognition practice. Many avatar-based fingerspelling display technologies suffer from a lack of basic collision avoidance, but even for those that can successfully display letter-to-letter transitions without collisions, the resulting animations are only modestly useful for improving student recognition skills. Typically, the portrayed speed is too slow and the letter formation too perfect. Simply increasing the frame rate is not helpful because the resulting animation does not accurately portray the processes that take place when human signers quicken their fingerspelling production.

This presentation describes a corpus-based study utilizing an n-gram extension to ELAN to gain a deeper understanding of deletion and coarticulation in fingerspelling. The analysis shows that coarticulation and deletion increase with fingerspelling speed and that deletions form an increasing percentage of the modifications at shorter durations. Insights from the study informed strategies to improve current avatar-based fingerspelling generation.