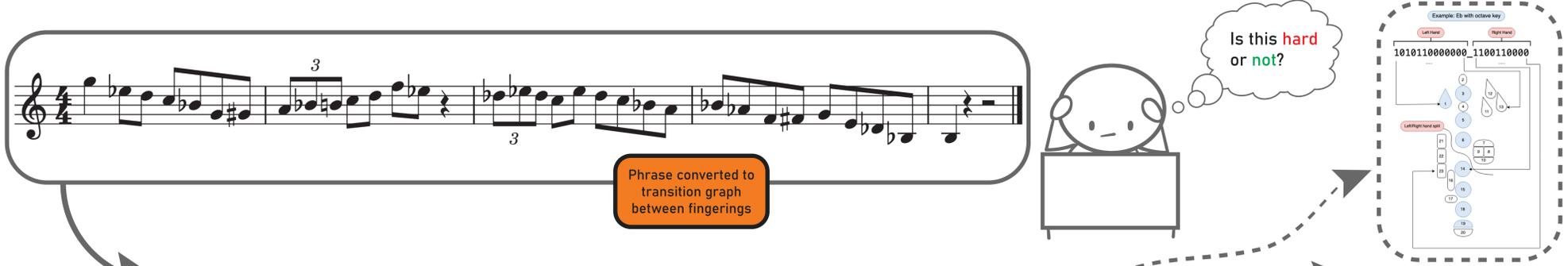


A computational model of difficulty for the saxophone

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REC
5 saxophonists, 817 trills, each ~5 seconds

Trill speed between fingerings used as proxy for transition graph weights

Session 0

B With octave key
Bb With octave key (Bis key)

DATA COLLECTION

Fundamental frequency prediction performed by CREPE

Audio segmentation

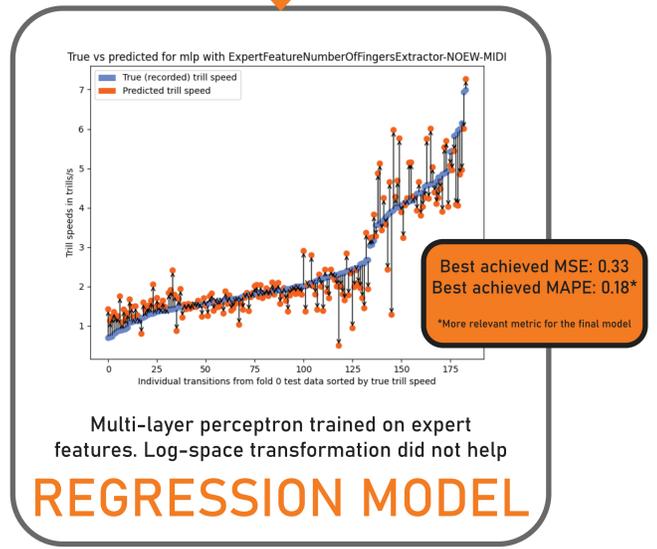
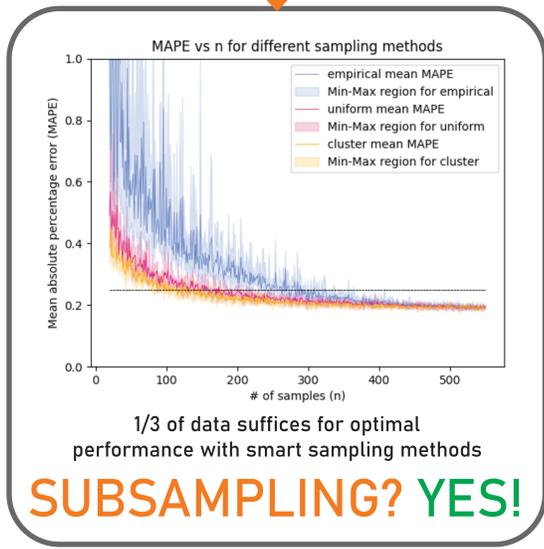
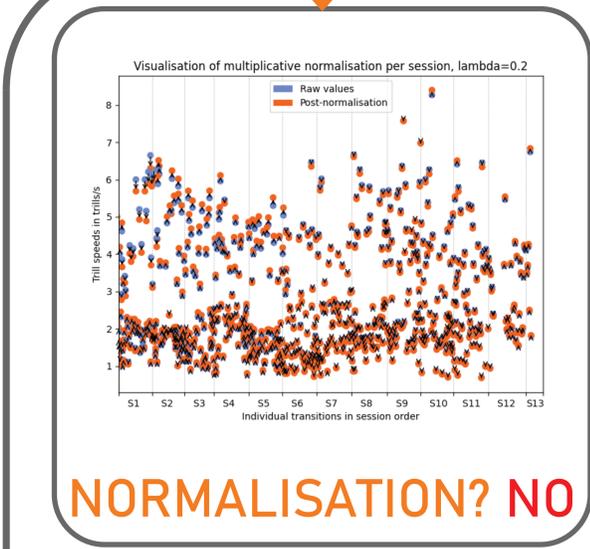
Trill speed extraction

Output maximum trill speed

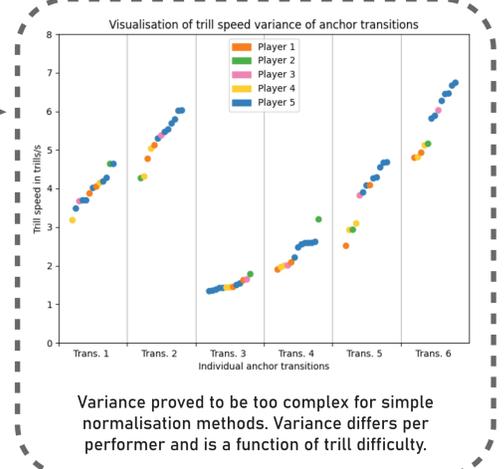
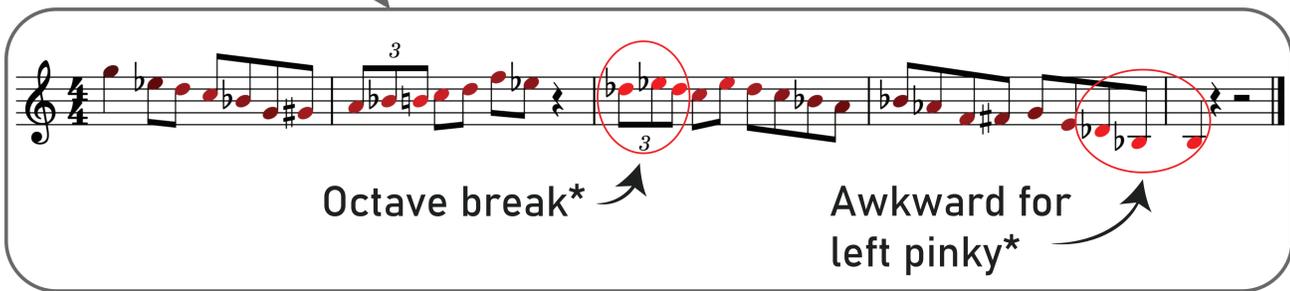
DATA PROCESSING

Based on pedagogical literature and interviews with saxophonists, we designed expert features; they greatly improve model performance compared to the "raw" and "finger-based" feature sets.

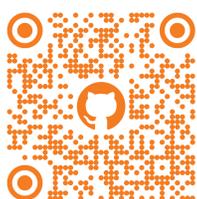
EXPERT FEATURES



Difficulty of note = $\frac{\text{required transition speed}}{\text{maximum transition trill speed}}$



*These insights are not generated by the model, only the colouring is. The annotations are there for non-saxophone players to understand why these sections are more difficulty.



Muscore 3 plugin integration + All code