Automatic classification of lexical stress errors for German CAPT

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Accentuation/prominence of syllable(s) in a word

In German:

- Variable placement, contrastive function

    um·FAHR·en   vs.   UM·fahr·en
    to drive around   *to run over*

- Reflected by duration, fundamental frequency (F0), intensity[1]
- Impacts intelligibility of non-native (L2) speech[2]

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[1]G. Dogil and B. Williams. "The phonetic manifestation of word stress".
In: *Word Prosodic Systems in the Languages of Europe*. Ed. by
H. van der Hulst. Walter de Gruyter, 1999. Chap. 5, pp. 273–334.
[2]U. Hirschfeld. *Untersuchungen zur phonetischen Verständlichkeit
Deutschlernender*. Vol. 57. Forum Phoneticum. 1994.

- Contrastive LS notoriously difficult for French speakers[1]
- CAPT offers huge potential for individualized instruction

- Automatic detection of LS errors in L2 German unexplored
- Recent work shows promising results using machine learning for classification of English stress patterns[2]

Our goal: classification-based detection of lexical stress errors by French learners of German

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[1] E. Dupoux et al. "A Destressing 'Deafness' in French?" In: *Journal of Memory and Language* 36.3 (Apr. 1997), pp. 406–421.

[2] Y.-J. Kim and M. C. Beutnagel. "Automatic assessment of American English lexical stress using machine learning algorithms". In: *SLaTE*. 2011, pp. 93–96.