

PROF. DR. HARALD BAAAYEN

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WIDE LEARNING IN LANGUAGE MODELING

Vortrag am 17.6.19 um 18 Uhr c.t.
in Raum S004 / Schellingstraße 3 (VG)

Convolutional neural networks are widely and successfully used in natural language processing. However, it turns out that there are tasks in which learning with 'wide' networks, i.e., simple networks with just an input and an output layer and very large numbers of units, can be surprisingly successful when carefully chosen features (based on domain knowledge) are used. I will illustrate finding for three case studies: French baboons learning to discriminate between English words and pseudowords, human auditory word recognition, and the computational modeling of inflectional morphology with what amounts to multivariate multiple regression.

References

Arnold, D., Tomaschek, F., Sering, K., Lopez, F., and Baayen, R.H. (2017). Words from spontaneous conversational speech can be recognized with human-like accuracy by an error-driven learning algorithm that discriminates between meanings straight from smart acoustic features, bypassing the phoneme as recognition unit. *PLoS ONE* 12(4): e0174623, 1-16.

Baayen, R. H., Chuang, Y. Y., and Blevins, J. P. (2018). Inflectional morphology with linear mappings. *The Mental Lexicon* 13 (2), 232-270.

Baayen, R. H., Chuang, Y. Y., Shafaei-Bajestan E., and Blevins, J. P. (2018). The discriminative lexicon: A unified computational model for the lexicon and lexical processing in comprehension and production grounded not in (de)composition but in linear discriminative learning. *Complexity*.

Linke, M., Bröker, F., Ramscar, M., and Baayen, R. H. (2017). Are baboons learning "orthographic" representations? Probably not. *PLoS ONE* 12 (8): e0183876