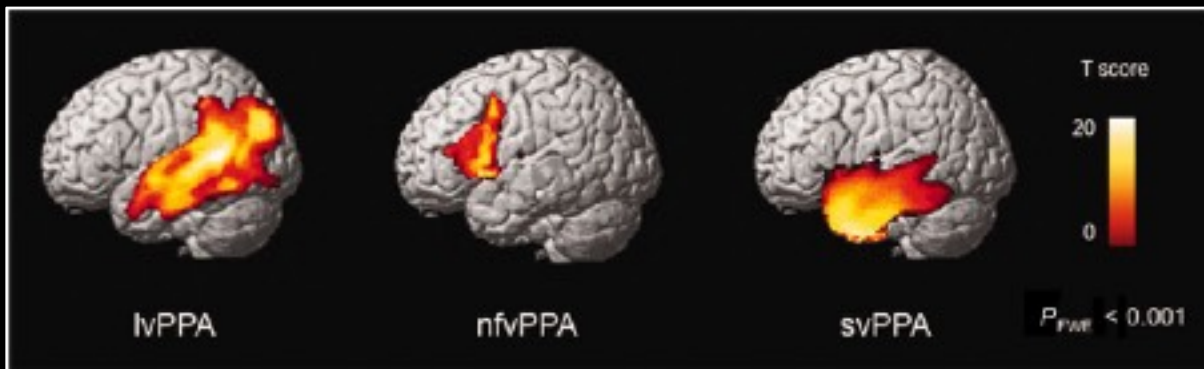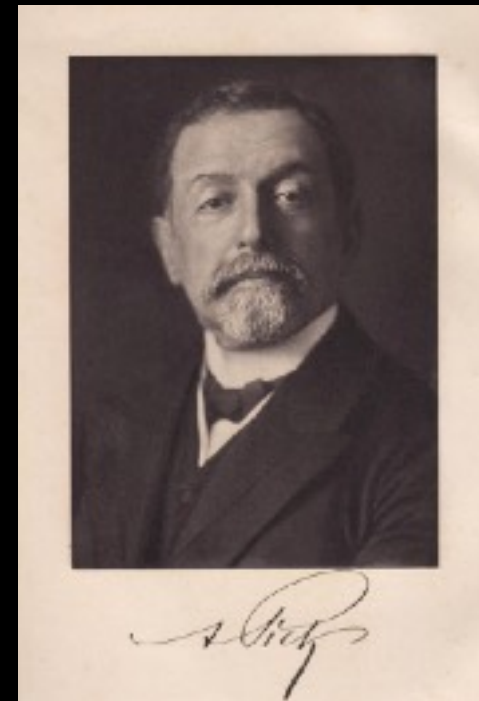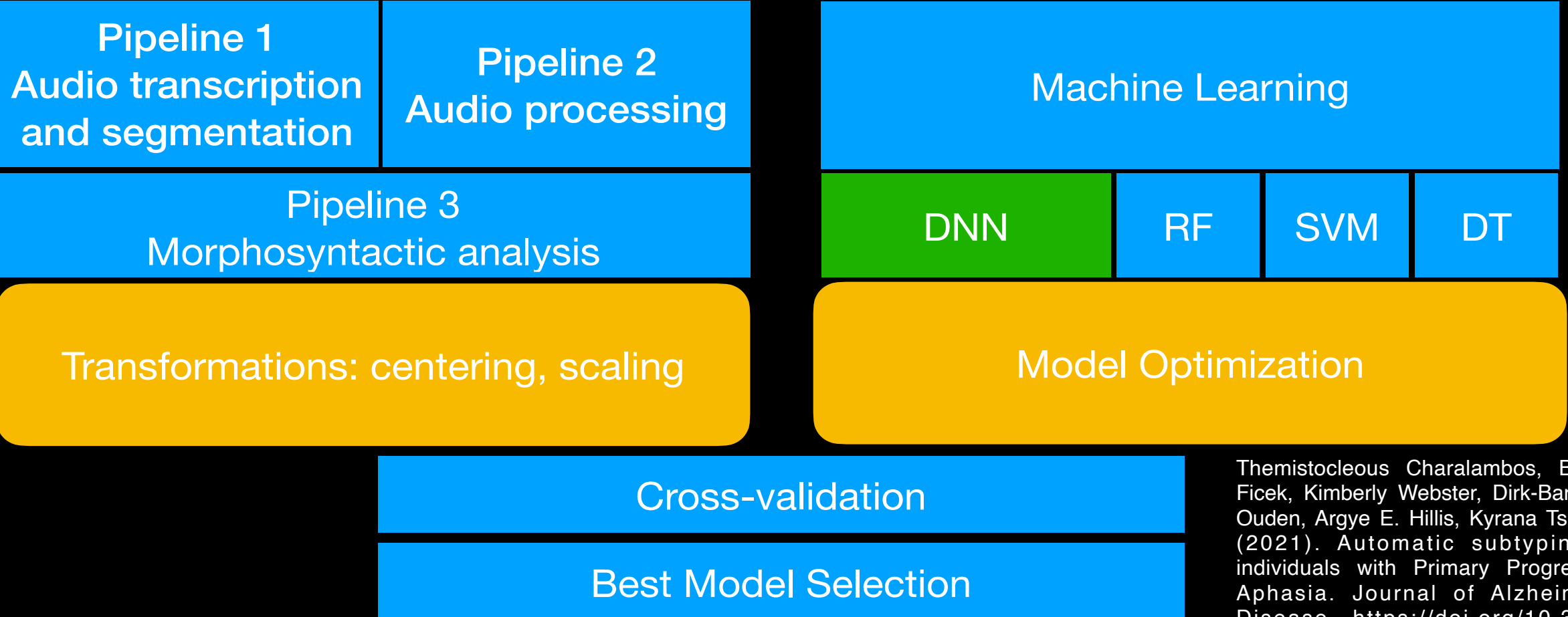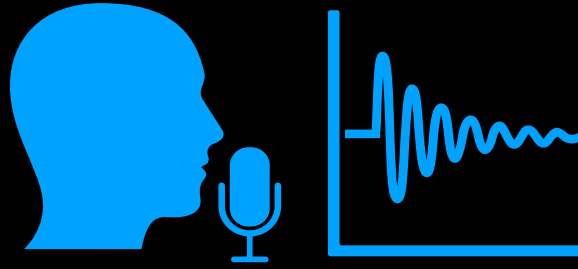# Primary Progressive Aphasia

- **Non fluent PPA variant (nfvPPA)**
  - impaired speech articulation or agrammatic speech
  - impaired comprehension of syntactically complex sentences
  - diminished production of verbs and fewer syntactically complex sentences

- **Semantic PPA variant (svPPA)**
  - difficulties in confrontation naming and single word comprehension
  - impaired semantic memory of familiar objects
  - 'empty speech' in verbal production

- **Logopenic PPA variant (lvPPA)**
  - difficulties in word retrieval
  - difficulties in repetition of long words and phrases
  - phonological errors in speech production

nfvPPA

svPPA

lvPPA

- 1892 - Arnold Pick (1851 – 1924)
- 1982 - Marsel Mesulam's seminal paper in 1982,
- 2011 - Gorno-Tempini, M. et al. consensus criteria,

Gorno-Tempini, M. L., Hillis, A. E., Weintraub, S., Kertesz, A., Mendez, M., Cappa, S. F., Ogar, J. M., Rohrer, J. D., Black, S., Boeve, B. F., Manes, F., Dronkers, N. F., Vandenberghe, R., Rascovsky, K., Patterson, K., Miller, B. L., Knopman, D. S., Hodges, J. R., Mesulam, M. M., & Grossman, M. (2011). Classification of primary progressive aphasia and its variants. *Neurology, 76*(11), 1006-1014.

Pipeline 1
Audio transcription and segmentation

Pipeline 2
Audio processing

Machine Learning

Pipeline 3
Morphosyntactic analysis

DNN | RF | SVM | DT

Transformations: centering, scaling

Model Optimization

Cross-validation

Best Model Selection

Themistocleous Charalambos, Bronte Ficek, Kimberly Webster, Dirk-Bart den Ouden, Argye E. Hillis, Kyrana Tsapkini (2021). Automatic subtyping of individuals with Primary Progressive Aphasia. Journal of Alzheimer's Disease, https://doi.org/10.3233/JAD-201101