Morphosyntactic biomarkers of PPA variants: non-fluent PPA, semantic variant PPA, and logopenic PPA variant.

## Study 2. Parts of Speech

- Agrammatism is an acquired deficit of morphosyntactic production.
- The challenge is to quantify Part of Speech (POS) production in connected speech.
- We built an NLP tool that automatically labels connected speech and provides the POS for each word produced.

## AJSLP

## Research Article

## Part of Speech Production in Patients With Primary Progressive Aphasia: An Analysis Based on Natural Language Processing

Charalambos Thernistocleous, "

Kimberly Webster,"
Alexandros Affhinos, and Kyrana Tsapkins\*\*

Background: Primary programine agricults (PPA) is a non-vollagementative disorder inherenterized by a programine decline of language functions. Its symptoms are proposed into three PPA voluntaria: mortilant IPA, lapapoint IPA, and semaptic IPA. Commission deficience offer depending and semaptic IPA.

Allies. This study area to determine the differences between PPA variants with request in a pair of speech PDG production and its identity morphologopal markets that classify PPA, variants variant scaling studyine learning. By fulfilling these alms, the overarching past is to previous eligentism measures that can facilities charact diagnosis, execution, and opposes.

Mathed and Presentance Connected speech productions than PPA patterns produced in a porture deception task ware transcribed, and the PDG class of each word was extinuted using relating studying processing, charactery, PCG.

lagging. We then implemented a handfold analysis: (6) linear regression to determine his qualiteris with nonlinear PTA, semantic PTA, and lagginess; self-anotherid PTA, semantic PTA, and lagginess; expensive classification analysis based of PCG anotherisms and Bit is expensived classification; analysis based of PCG using machine to expensive the control of the pts of the

orphosymanic deficits have been identified as one of the law suspicana of primary program department of Manuslam et al., 2014, 2012; Manuslam & Weintmanh. 2014), a neurodopmerative condition that results in a considerable determination of speech and language didle (Thompson, Lukin, et al., 2012). Thompson

'Ospertment of Neurology, Johns Hopkins School of Medicine, Bullimore, MID

"Department of Dislacysprings, Inless Hopkins Medicine, Bulliances MD

Submore MD

Companion to Charismbo Thesistolinus obmiclijbs ob Edite to Chief Miller Dell'

Editor Dirk B. Dec Outer Received September 14, 2019

Residue Inspiration 14, 2019 Revision marked February 14, 2020 Assepted May 13, 2020

https://doi.org/10.1046/2020\_02/02/27/19-00014

Publisher Note: This article is part of the Special Insue Select Papers. From the 49th Clinical Aphanology Conference. & Mark, 2014). PPA is characterized by substantial variability of symptoms as an effort of the degree of neuroscaperactive decline, underlying pathology, and areas of brain demage (Mesulam, 2011; Thompson, Lukic, et al., 2012). Thompson & Mach, 2010; To understand the symptoms, society parallelized communicativities density patential into these mans PPA variance (PPA dearly patential variance). PPA variance (PPA) in the hypothesis (PPA) and the semantic (PPA variance) (PPA).

Memphasystenic production is tay for integrage communication, and as it becomes impaired in FFA, it can provide objective teachers for the dissollutions of potents with FFA into variants. For clinical readulation, properly of the condition, and intervenies. Parliams with sPFA are characterized by sparsity of function would and about a peak appearing of function would and alnotunal system due to peak armoging at the posterior indivise function of the production of the peak armonic production function of the peak armonic production of the peak function of the peak armonic production of the peak function of the peak armonic production of the peak armonic production of function of the peak armonic production of the peak armonic production of the function of the peak armonic production of the peak

Bladeage: The series have deliced the recomputing increase coincides the e/publication.

American Sound of Speech Companies Reflorings in 11-16 in Companies B 2000 American Speech Companies Resolution