DETECTING PARKINSON'S DISEASE

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PROBLEM STATEMENT AND MOTIVATION

The aim of our project is to detect Parkinson's Disease from keyboard typing timing and patterns.

By providing a quick and accurate early diagnosis of the disease, quality of life can be improved.

AFFECTS

1 IN 500

PEOPLE IN CANADA

BACKGROUND INFORMATION

- Parkinson's Disease is a degenerative disorder which affects the nervous system
- Its cause is not clearly understood and no cures exist yet
- No laboratory test exists to diagnose Parkinson's Disease, have to see a specialist

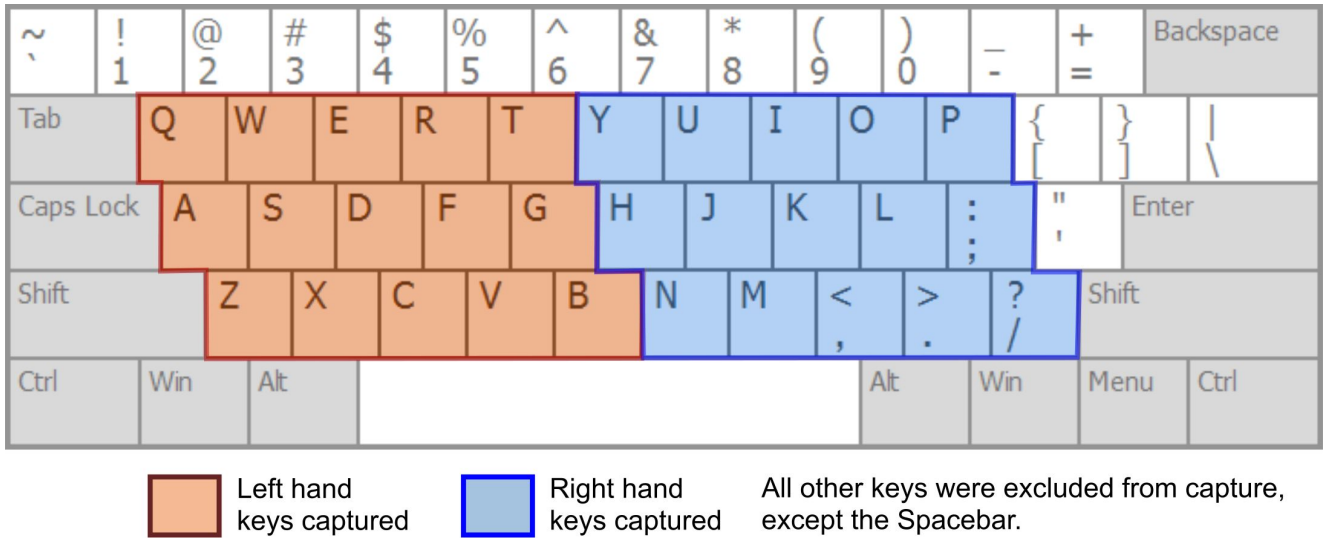
THE DATA

Participants used an installed software program, “Tappy”, that monitored and tracked keystrokes during normal computer use

- Data collected from 217 participants
  - 162 patients experiencing mild to severe Parkinson’s Disease
  - 55 patients for control

- 34, 171 keystrokes recorded on average per participant

THE FEATURES

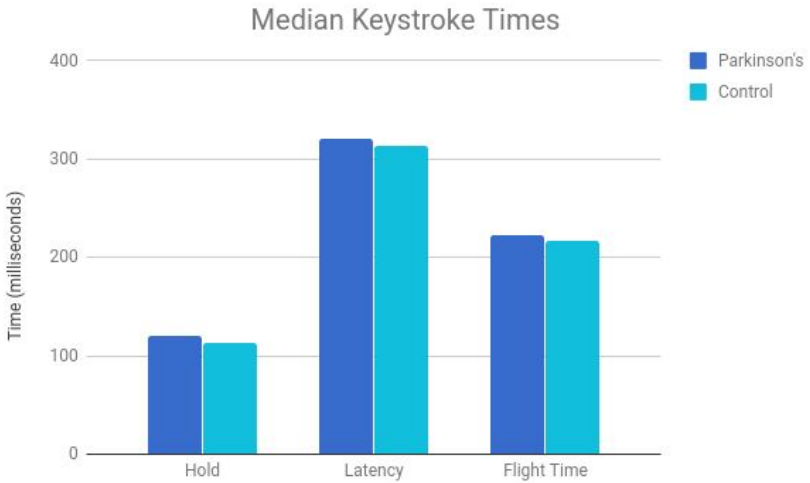


- DIRECTION
- HOLD
- LATENCY
- FLIGHT TIME

Adams WR (2017) High-accuracy detection of early Parkinson's Disease using multiple characteristics of finger movement while typing. PLOS ONE 12(11): e0188226. https://doi.org/10.1371/journal.pone.0188226 http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0188226

VISUALIZING THE VARIABLES

- As expected, slightly increased keystroke times over all variables for those with Parkinson's Disease
- Difference was not found to be statistically significant
- May be a potential challenge



NEXT STEPS ...

APPLY MACHINE LEARNING MODELS (next week)

OPTIMIZE PERFORMANCE WITH CREATED FEATURES (next 2 weeks)

DETECT IN REAL-TIME (next 3 weeks)

DONE!

THANK YOU.

QUESTIONS?