

Eye Tracking Data is the Future of Dyslexia Diagnosis



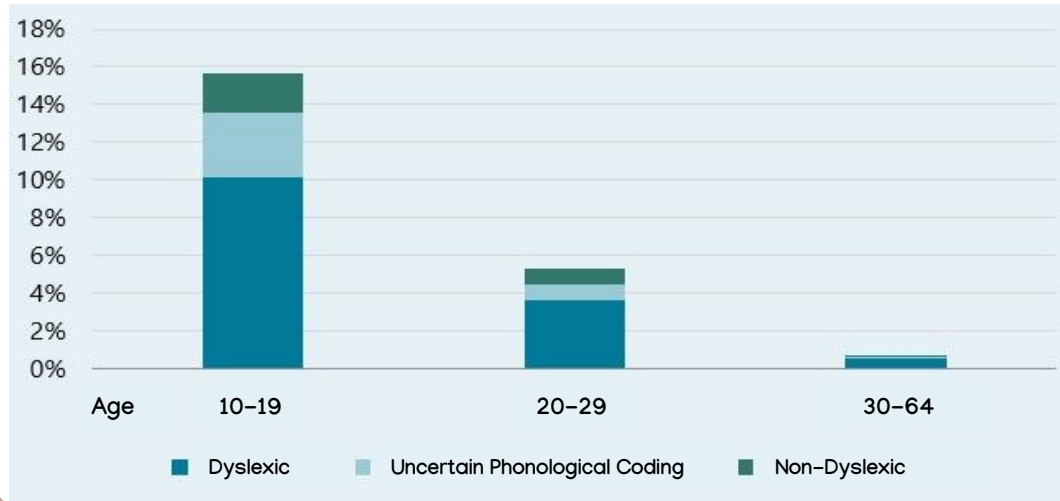
BSc. Data Science: Sarah D. Ramezanpour, Carl A. Wismer, Sebastian A. B. Andersen, Mie Jonasson

Researchers: Marina Björndóttir, Nora Hollenstein & Maria Barrett

IT UNIVERSITY OF COPENHAGEN

Danish Dyslexia Screening is Problematic

- Designed for Children
- Based on Common Characteristics



Source: SPS & Børne- og Undervisningsministeriet

Dyslexia Differs by Language Difficulty

- Orthography Describe Differences in Spelling and Pronunciation
- Dyslexia is More Common for Deep Orthographies

Orthographic depth						
		Shallow			Deep	
Syllabic structure	Simple	Finnish	Greek Italian Spanish	Portuguese	French	
	Complex		German Norwegian Icelandic	Dutch Swedish	Danish	English

Source: British Journal of Psychology (2003) – Foundation Literacy Acquisition in European Orthographies



Eye Tracking Solves the Problem?



Examine Natural Reading



Use Machine Learning Classifier

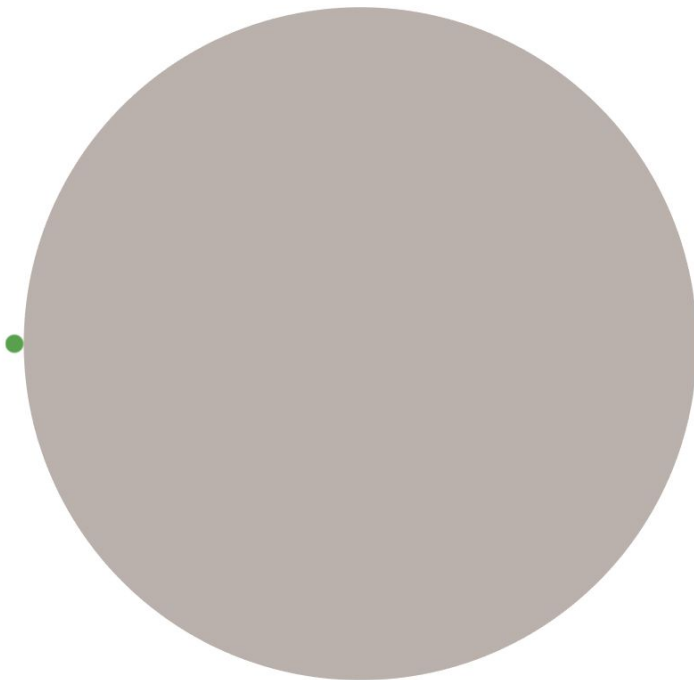


High Accuracy for Adults in Various Languages

Research on Danish Language is Sparse

- Small Native Speaker Population
- Finding Data Subjects Challenging
- CopCo – Addition of Dyslexic Dataset

■ Denmark
■ Rest of the World





Misclassifications Happen due to Variety

- ADHD causing misclassifications
- Dyslexia is not “one size fits all”

We Have a Far Way to Go...

But We Are Getting There!

- More Data...
- On Subgroups...
- To Generalize...
- For a New Norm

