Automatic Identification of Suicide Notes
from Linguistic and Sentiment Features
Importance

Close to 800,000 people die by suicide every year.
Suicide Leads

- Trend:
  - Publish suicide notes in social media
  - Express suicidal feelings online
  - Language represents shifting in psychological states

![Example suicide note in social media](image-url)
Social Network Application

- Facebook – User reporting
- Google – Automatic detection
Related Works

- Provide evidence to genuine notes (manual)
- Sentiment features (manual)
- Models based on linguistic only (auto)
  - structural features (nouns, adj., length)
  - 82% prediction

- New work –
  - combining features
  - disorders notes

Genuine / Fake Notes

Suicide / other
Data Collection
Suicide Note Purpose

- Current feeling
- Apologize
- Instructions
- To comfort the survivors

Level \ Type of self disclosure
Features

• Sentiments
• Linguistic
• Statistics
Results of Classification - intro

- **WEKA** classifiers:
  - **LMT** - logistic tree regressor
  - **J48** - decision tree classifier
  - Naïve Bayes classifier
  - **Zero-R** - simple majority baseline
Statistics Terming

- Accuracy
- Precision
- Recall
- F-score

\[ F = 2 \cdot \frac{\text{precision} \cdot \text{recall}}{\text{precision} + \text{recall}} \]
Results of Classification

- **all features**

- **sentiment features only**

- **linguistic features only**
Discussion of Sentiment Features

Suicide  Love  Depression
Discussion of Linguistic Features

- Best predictors:
  - Length of a note
  - # of verbs and nouns
  - Endearment
  - Signs
  - Relativity

- Signs: "+", "&" > "and"
26th of Dec Is Supposed my Birthday But It will Be My Last Day Please People if you Love or Loved me Take a one minute Stand for me in Black I will be Gone to the Place Of Rest May Our Dear Lord Jesus Christ Accept my Sinful Soul Till We meet Again.. Your Dearest Oluwaseun Maria Omo Awosanya 😇😇😇😇😇😇😇
Conclusion and Future Works

• Important research direction
• Combination of sentiment and linguistic features
• Automatization of sentiment analysis
• Limitations:
  • language change affects
  • linguistic characteristic of online notes
Hi google! I'm not depressed. It's just case study about suicide.

YOU ARE NOT DEPRESSED, STOP IT! - YouTube
https://www.youtube.com/watch?v=ykvC3QXJb18

Sorry, but somebody had to say it. This video focuses on mood depression, not clinical depression.

For Those Considering Suicide - YouTube
https://www.youtube.com/watch?v=IqqlV8x82Qc

For more resources, please look here: http://goo.gl/7xlUv

Are You Thinking of Killing Yourself? | Speaking of Suicide :
https://www.speakingofsuicide.com/2013/04/15/are-you-thinking-of-killing-yourself/

They may feel, often rightly so, that their suicide will cause guilt in those .... feeling - 2013 for my self or a better 1 is I'm just "looking for attention" well I .... I'm not depressed. I'm exhausted and the anxiety of my day to day life ...... A google search for me would quickly turn up this post if I signed it with my name.
Questions?