

Predicting Suicide Ideation

Machine Learning for Mental Health

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The World Health Organization reports

800,000

people die due to suicide every year.

That's one person every **40 seconds**.

Crisis Text Line

- Free, 24/7 support for people in crisis
- Text 'HOME' to 741-741 in the US

Volunteer Crisis Counselor + Empathetic Human Person



Mental Health Crisis

Are you thinking about suicide today?

Do you have a plan?

Do you have the means?

Do you have a timeline?

Mental Health Crisis



Are you thinking about suicide today?

A diagram consisting of six arrows pointing towards the word 'thinking' in the sentence above. Three arrows point downwards from the top, and three arrows point upwards from the bottom.

Do you have a plan?

Do you have the means?

Do you have a timeline?

if we can

predict suicide ideation

maybe we can

prevent suicide

GOAL

Build a machine learning model
to predict suicide ideation.

Process

Collaborative Psychiatric Epidemiology Surveys (CPES), 2001-2003

5,500

features

20,000

respondents

Results

RF = Random Forest
LR = Logistic Regression

Model	Feature Count	Accuracy	Recall	Precision
RF	7	85%	8%	23%
LR	7	86%	.02%	23%
RF	1,110	91%	39%	74%
LR	1,110	88%	44%	53%

Conclusions

Assumptions

Features

Challenges

Next Steps

Continue researching and modeling on new datasets

Explore themes for most predictive features

Model for features that are not explicitly mental health

Questions?

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Thank you!

