Stroke Prediction using Machine Learning

ML-9:

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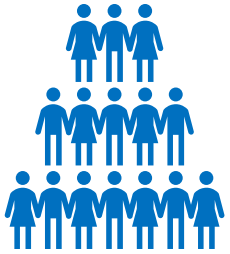
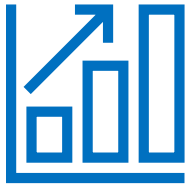
The Cost of Stroke in Canada



About

50,000

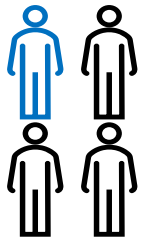
people suffer strokes in Canada each year



After age

55+

risk of stroke increases rapidly



Approximately

1 in 4

living with stroke are < age 65

Attributable cost of stroke about

$30,000/yr

per person in Ontario, Canada

Identifying stroke risk factors is essential for improving patient outcomes and reducing costs on health care system

All about stroke | The Ottawa Hospital Foundation

https://www.ahajournals.org/doi/10.1161/STROKEAHA.123.043369

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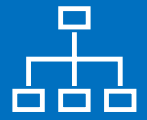
Dataset

11 features, 5110 records:

- ✓ Demographic
- ✓ Residence type
- ✓ Health indicators
- ✓ Socioeconomic
- ✓ Stroke occurrence

Techniques & Technologies

Logistic Regression



Random Forest

Neural Network (FCNN)

- Parameter tuning
- Regularization
- Cross-validation

Risks & Unknowns

- Class imbalance (limited stroke data)
- Missing data, general quality
- Generalizability
- Model complexity

Aims

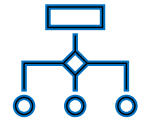
Baseline models

Neural networks

Evaluation metrics

Identify key indicators

Outcomes



Stroke-risk model

Targeted screening

Actionable insight

Prioritize care

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