PROGRESSIVE®

Injury AI

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Overview:

- Business Goal
  - Practical to Progressive
- Data Understanding
  - Where When Who
- How the model works
- Model performance
  - Grading
- Further steps

$3.4 Billion/year

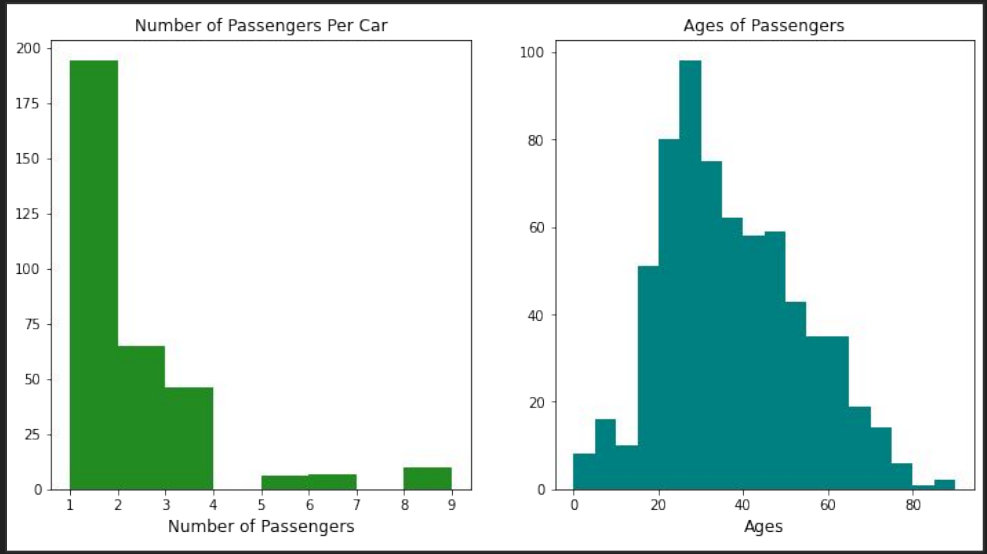
Annual loss to accident related fraud according to a 2017 study by Verisk

Business Goal: Accurately report injury in event of car crash

- Progressive can use this to:
  - Detect fraud
    - Improve customer rates
  - Gain insight into crash related injury
  - Improve service
    - More accurately provide claims

Data Understanding

- Samples derived from Chicago
- Collected over 3 day period
- Groups represented
  - Average age: 36
  - Typical passengers: 1
- 92/8
  - Only 8% were injured



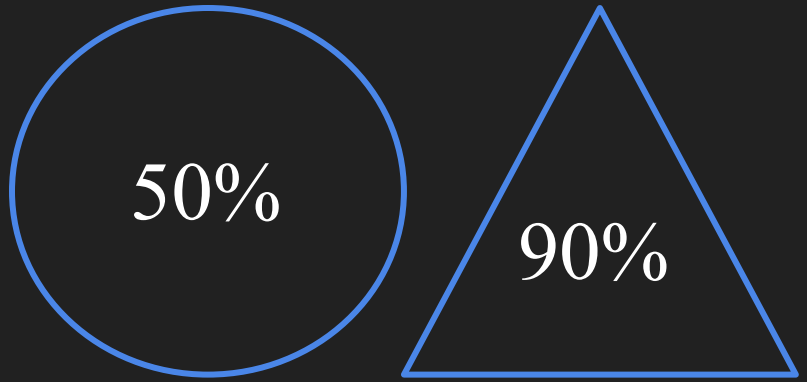
Model Breakdown

- Classifier
  - Predicts injury or no injury
- Supervised AI
  - Learns off of fed data
- Collection of models
  - Ensemble- group of AI

Model Performance

Graded on two metrics:

- Ability to predict events of injury when injury occurred
  - Approximately 50%
- Overall accuracy
  - Approximately 90%



Model's Relevance to Predict both events

Best of both worlds

- Provide service to genuine claims
- Disprove fraudulent claims

Flexibility allows to provide better rates

- Lower unneeded payouts
- Find close to true rate of injury
    - Underwriting purposes

Moving Forward

Suggested model use:

Underwriting

- Implement model to emulate rate of injury
  - Establish what to expect for preparing rates

Claim fulfillment

- Use the model to verify claims
  - Model can reliably discern cases of injury

Thank You

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