

Proposal Presentation

Image Recognition of Vehicle Readings

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Upload your odometer reading evidence

Upload any of the following as proof of your odometer reading:

- A clear and legible photo of the odometer
- A receipt or work order with an odometer reading from a garage, mechanic, auto shop or dealership
- An odometer reading from an app or service that provides vehicle information and diagnostics



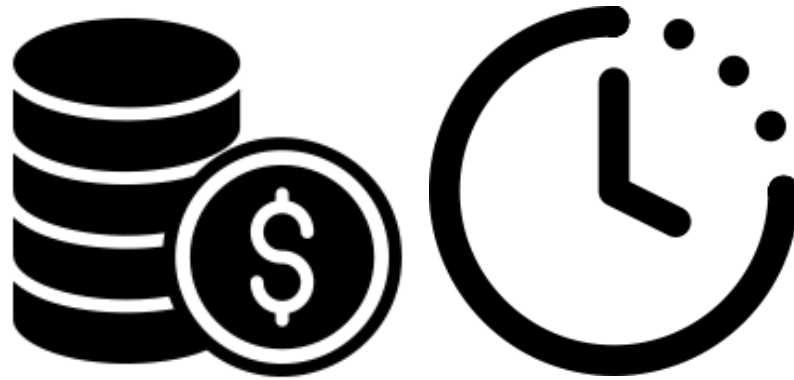
Tips for taking a good photo

Ensure the odometer is clearly legible — no glare obscuring the odometer, numbers are not blurred, and

Drag and drop your file below or click to browse (.jpg, .pdf or .png file formats, up to 6 MB per file, total of 25 MB):

Browse files

The problem...



The objectives...



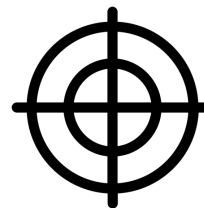
?

Car



?

123456



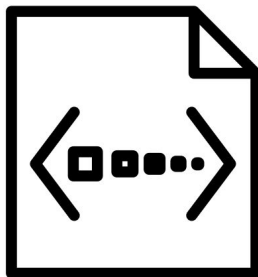
?

90%
confident

Data introduction



40k+ images of odometer
readings from past three years

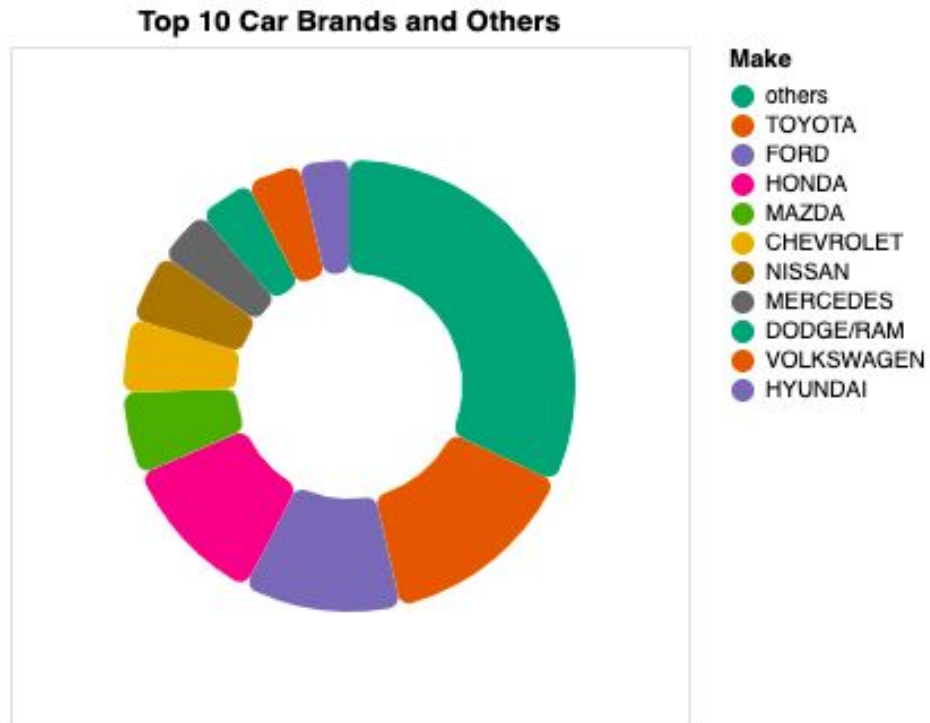


metadata includes make/
model/year of the car



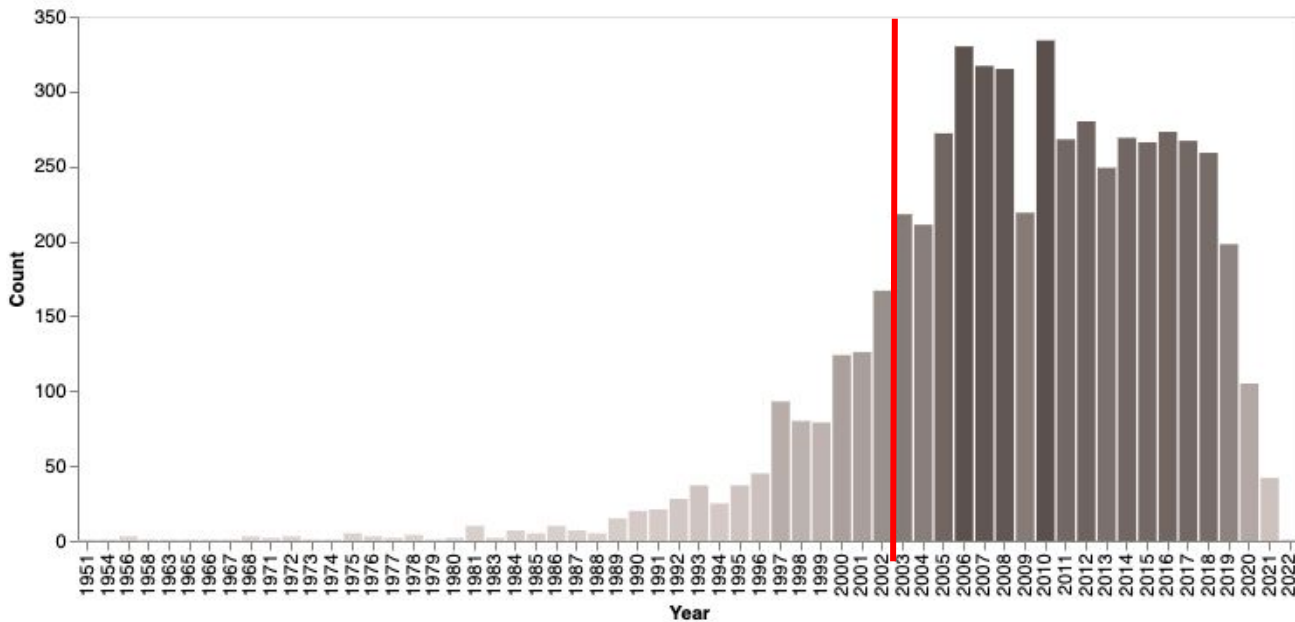
metadata example:
`{make:'MAZDA', model:'MZDA3', year:2010}`

Some EDA results



Some EDA results

Distribution of Manufacturing Years



Initial Attempt – OCR

Tesseract



EasyOCR



32% of images obtained an odometer-like value

Initial Attempt – Image size

Full resolution

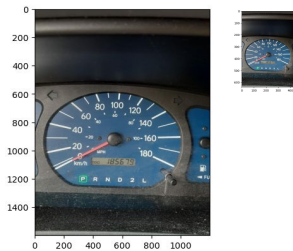
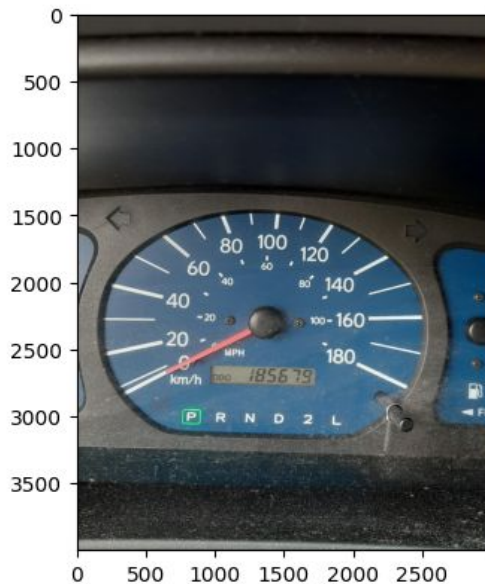
32% of images obtained an odometer-like value

1600px (long axis)

28% of images obtained an odometer-like value

640px (long axis)

25% of images obtained an odometer-like value



Initial Thoughts

- Not as easy as you'd think
- Machine learning approach works better
- Existing proprietary approaches - our goal to improve performance for ICBC production

ORIGINAL RESEARCH article

Front. Appl. Math. Stat., 10 December 2019
Sec. Mathematics of Computation and Data Science
Volume 5 - 2019 | <https://doi.org/10.3389/fams.2019.00061>

This article is part of the Research Topic
Artificial Intelligence in Insurance and Finance
[View all 12 Articles >](#)

Mileage Extraction From Odometer Pictures for Automating Auto Insurance Processes



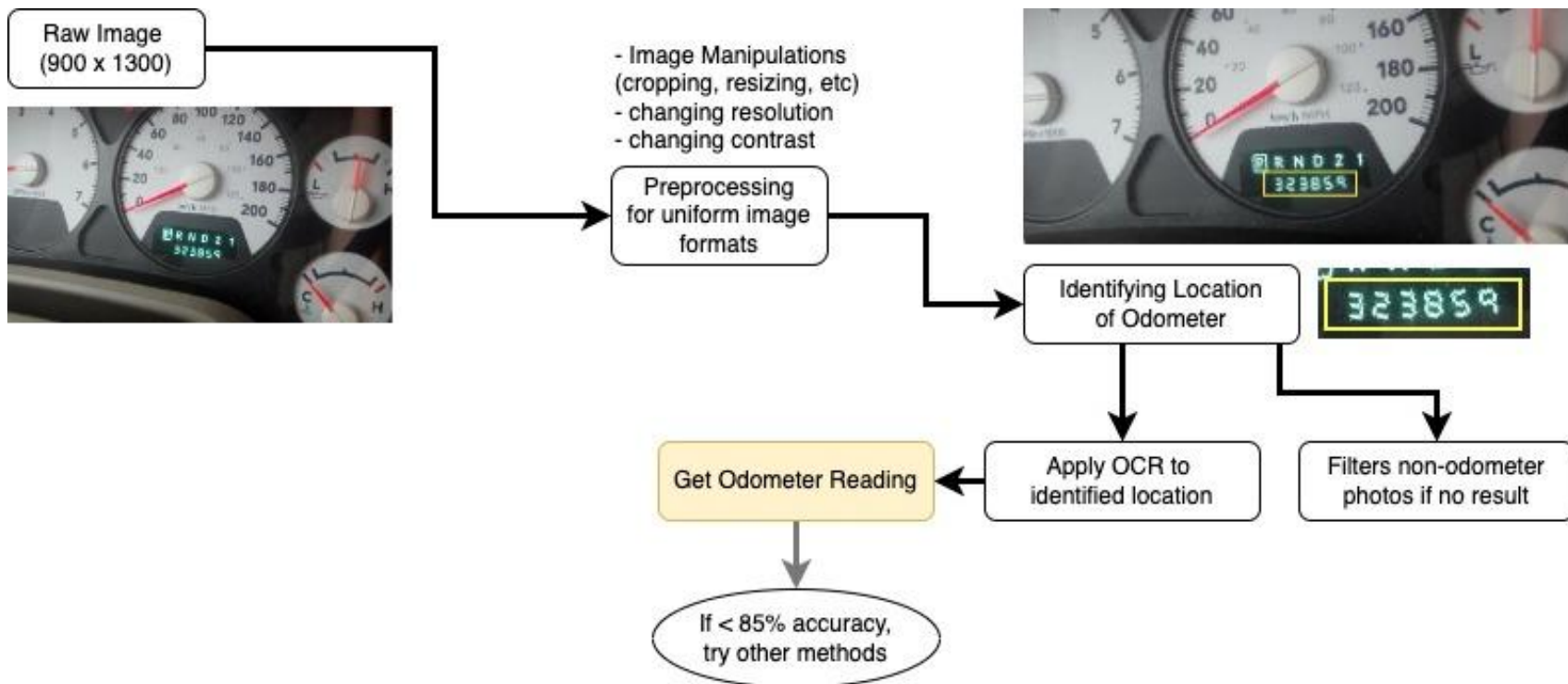
Shailesh Acharya* and



Glenn Fung

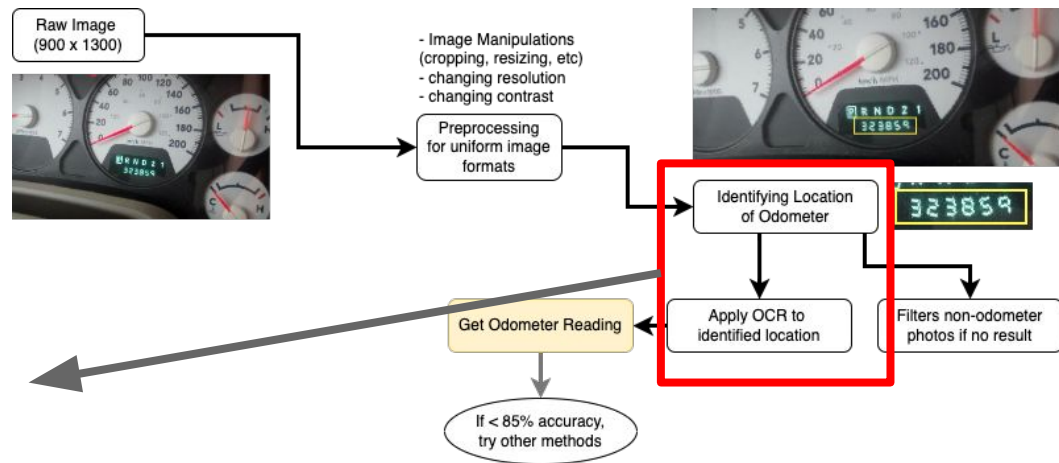
Machine Learning Research and Innovation, American Family Insurance, Madison, WI, United States

Our Approach



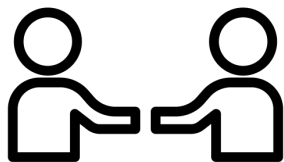
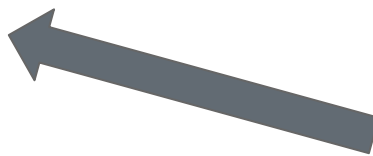
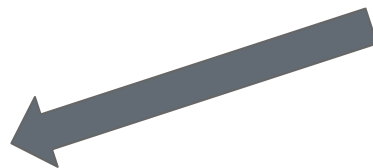
Data Science Approach

- Data Science Tasks
 - Segmentation
 - Optical Character Recognition (OCR)
- Goal: to get above 32%
 - Tools:
 - CNN
 - RCNN
 - single shot multiBox detector (SSD)
 - Transfer learning
 - VGG, Inception, Resnet
 - imagenet, Pascal VOC, MS COCO
 - Technologies:
 - YOLOv5

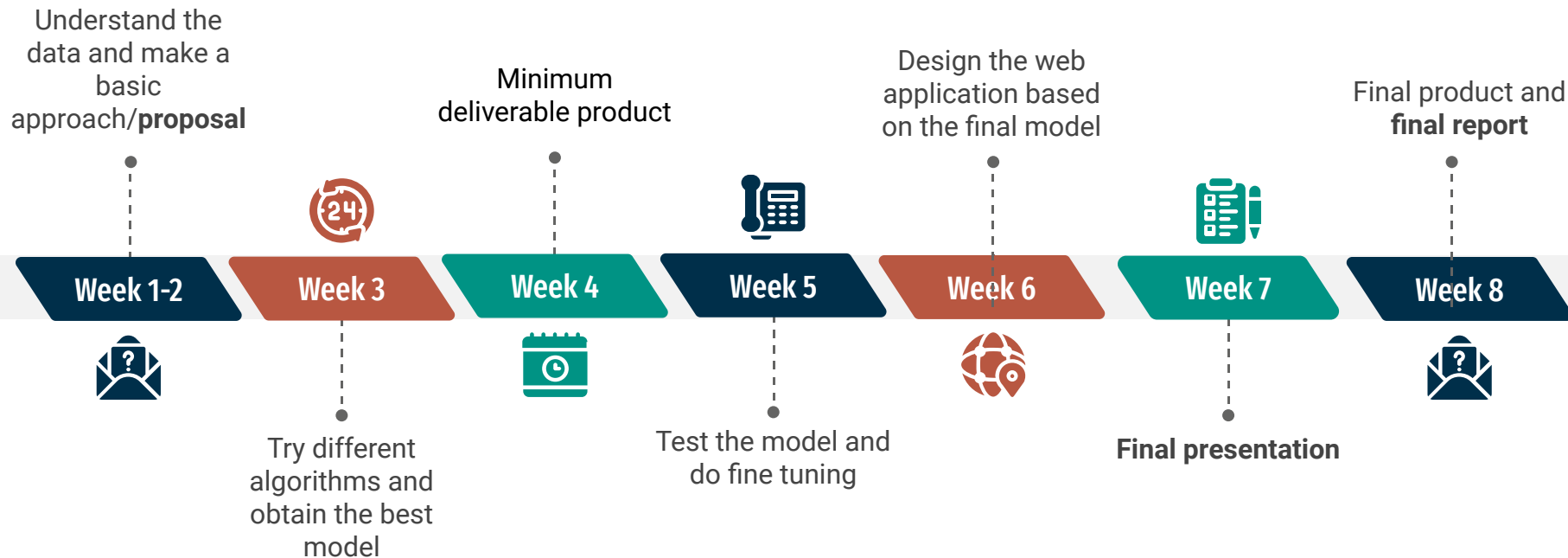


90%

Accuracy and Confidence



Timeline



THANK YOU

Questions