PDF Classifier

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Motivation

- Businesses get hundreds of PDFs
- PDFs are sorted by employees
- Takes a lot of time and costs money
- Goal: Classify PDFs

Data

- 14 different classifications
  - Appraisal
  - Income
  - Insurance
- ~700 documents and uneven classes
- PDFs in each classification vary
  - Forms
  - Scans
  - Faxes

Text Extraction

- PDFminer
  - Works well for PDFs with text layers
  - Much quicker than PyOCR
- PyOCR (python wrapper for Tesseract)
  - Works well for most PDFs
  - Takes a long time

Different Models

Naive Bayes	TF-IDF	TF-IDF
Simpler NLP model Worked well for some categories and not so great with others	Average Cosine Similarity Tried to capture signal from variation in documents of the same category	kNN Cosine Similarity Only looked at the n most similar documents

Cross Validated Accuracy

- Used Stratified Cross Validation due to uneven classes

Naive Bayes	Average Cosine Similarity	kNN Cosine Similarity
PDFminer:	PDFminer:	PDFminer:
~ 0.58	~ 0.67	~ 0.71
PDFminer and PyOCR:	PDFminer and PyOCR:	PDFminer and PyOCR:
~0.62	~0.75	~0.82
PyOCR:	PyOCR:	PyOCR:
~0.48	~0.67	~0.81

Future Work

- Renaming/Filing documents automatically
- Extracting specific text strings
  - Name
  - Address
  - $$$ Values

Thank You
Questions?

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