



Data Science for Guide Dogs

Andrea Everett

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The Guide Dog Marketplace

- Growing demand
- But strict criteria for health & temperament
 - Only 36-50% graduation rate
 - Some never make it to training
- Non-profits spend \$50,000 per dog
- Need to increase graduation rates!



Of these six puppies, only 2-3 will make it as guide dogs...

The Data

STRUCTURED

- ~500,000 health records
 - Medical history
 - Genetic mappings

UNSTRUCTURED

- 65,000+ behavioral/temperament records
 - Questionnaires, journals
 - From trainers & host families



[12+ generations of dogs]

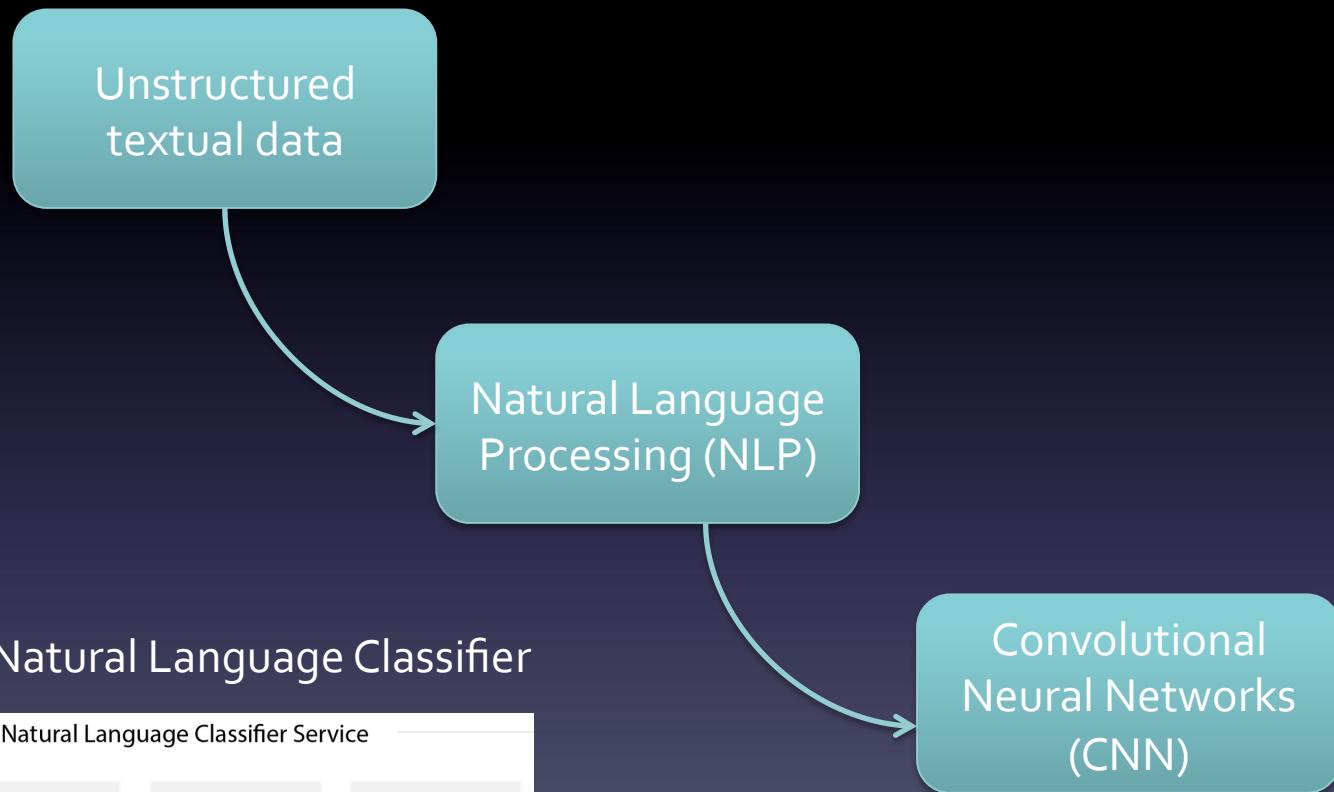
Jackson: An IBM Data Story

The Science

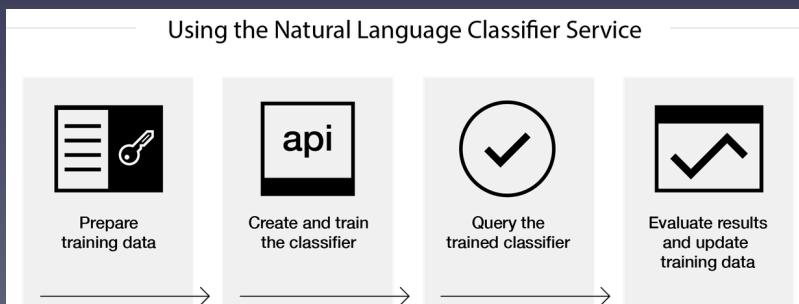
- Classification
 - Which dogs will get through training?
 - Which dog-human matches will succeed?
- 4 Areas
 - Breeding: genetic patterns → performance?
 - Screening: traits to predict success pre-training?
 - Training: traits to pair puppies with trainers?
 - Placement: traits to pair dogs & owners?



Science, cont'd



IBM Watson Natural Language Classifier



Resources

- "IBM Cloud, Watson Help Guiding Eyes Breed Superior Guide Dogs" ,
<http://www.eweek.com/cloud/ibm-cloud-watson-help-guiding-eyes-breed-superior-guide-dogs.html>
- Guiding Eyes For the Blind, IBM Case Study,
<http://ecc.ibm.com/case-study/us-en/ECCF-EDCo3025USEN>
- Science behind:
 - IBM Natural Language Classifier,
<https://www.ibm.com/watson/developercloud/doc/nl-classifier/science.shtml>
 - IBM Personality Insights,
<https://www.ibm.com/watson/developercloud/doc/personality-insights/science.shtml>
- Guiding Eyes for the Blind website, <https://www.guidingeyes.org/>

