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Why Language is Hard: Structure and Predictions

Advanced Machine Learning for NLP

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INTRODUCTION

Today

- What's special about machine learning for NLP
- Layout of the course
- Administrivia
- Perceptron
- Structured Perceptron

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 - ① Good ML analysis, standard NLP problem
 - ② Often ignored in both classes (except when I teach it)
 - ③ Uses structure and representation

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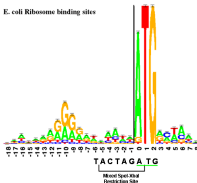
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- Independent!

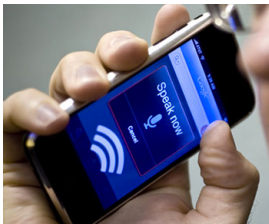
Is this how the world works?



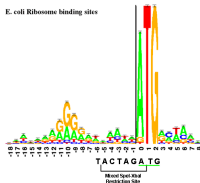
E. coli Ribosome binding sites



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Also particularly relevant for 2016: correlated voting patterns

Why is this ML class different from all other ML classes?

- NLP has very specific applications
- NLP has very specific ML problems
- Much of the skills you need to do ML well are domain-specific
- Culture in ML for NLP research is slightly different than vanilla ML
 - Cleverness is not enough
 - Good baselines are important
 - Simple is usually better