# Babble: Learning Grammar Structure with Generative Adversarial Networks

## Brian Clark, CWRU

## December 17, 2017

## Contents

1	Introduction	2
	1.1 Problem	2
	1.2 Grammar	2
	1.3 Generative Adversarial Networks	2
<b>2</b>	Background	2
3	Approach	2
4	Results	2
5	Discussion	2
6	Conclusions	3

#### Abstract

This is the text of the abstract

#### 1 Introduction

#### 1.1 Problem

Goal: Generate text that looks like it came from a language Problems: How to determine whether the text is from the language?

#### 1.2 Grammar

Rule system to describe language Defined grammar -; any sentence can be judged If we had grammar, could use as penalty function Complexity Rather than come up with rules, rely on data

#### 1.3 Generative Adversarial Networks

How they work Role of generator Role of discriminator

### 2 Background

???

## 3 Approach

Description role of generator inputs outputs role of discriminator inputs outputs overall diagram Grammar definition Abstract definition class diagram? Tools nltk Grammars SimpleGrammar description generation process \_Grammar English Network definition Tools keras Generator structure diagram Discriminator structure diagram

#### 4 Results

Experiments Network structure Amount of data

#### 5 Discussion

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

## 6 Conclusions

Some text, from [1]

## References

[1] François Chollet et al. Keras. https://github.com/fchollet/keras, 2015.