



AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY

Seminar in *Artificial Intelligence*

Word embeddings

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8.05.2019

Agenda

- 1 **Introduction**
 - Subtopic 1
 - Subtopic 2

What is word embedding?

Introduction

What a **lovely** day.
What a **nice** day.

What = $[1, 0, 0, 0, 0]$

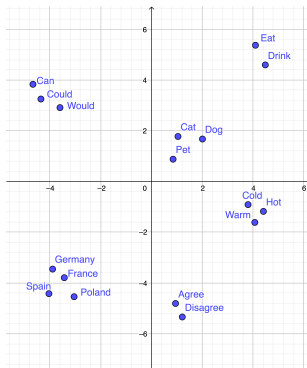
a = $[0, 1, 0, 0, 0]$

lovely = $[0, 0, 1, 0, 0]$

nice = $[0, 0, 0, 1, 0]$

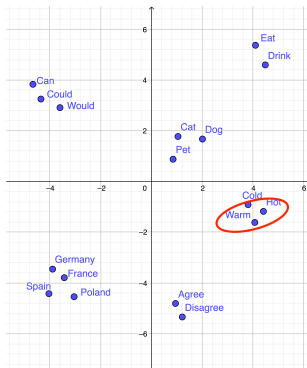
day = $[0, 0, 0, 0, 1]$

Word Embedding



Caption of the figure

Word Embedding



Words are synonyms

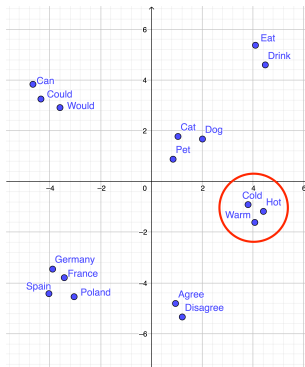
Word Embedding



Words are antonyms

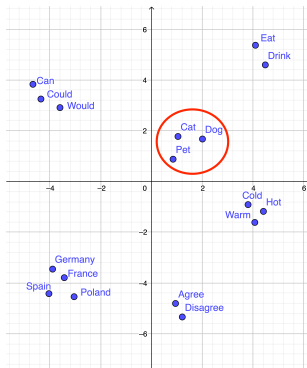
Word Embedding

Slide with a Figure from a File



Words are value on a scale

Word Embedding



Words are hyponym - hypernym

Word Embedding



Words appear in similar context

How can we use it?

- If user search for "Dell notebook battery size" we would like to match it also with "Dell laptop battery capacity"
- If user search for "Cracow Motel" we would like to match it also with "Krakow Hotel"

Title of the Slide

Subtitle of the Slide: Use Only if Necessary...

- Bullet point 1.
- Bullet point 2 -e- you can emphasise a text.

Title of the Slide

Slide without Bullets

Text:

Blocks are good for important notions.

Alertblocks are even better to catch the attention.

Title

You can have the title in the (alert)block.

Title of the Slide

Slide with a Figure from a File

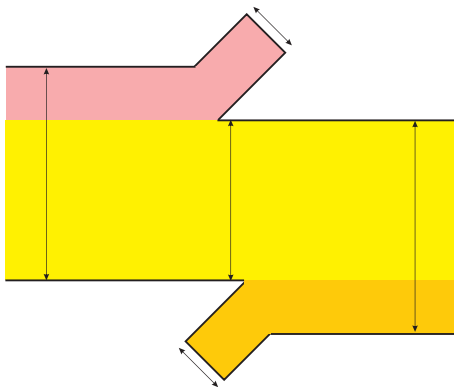
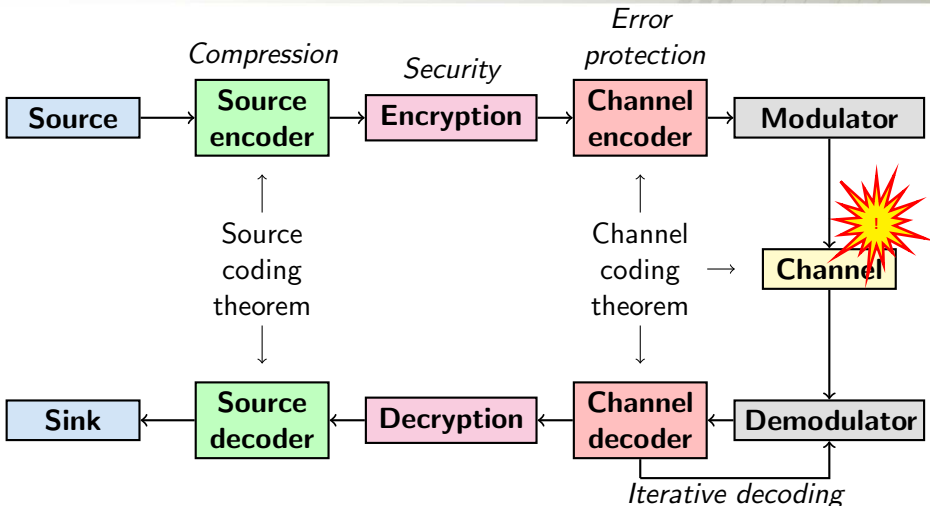


Figure: Caption of the figure

I am sorry that the example figures and the table concern the information theory ☹

Title of the Slide

Slide with a Figure Drawn with tikz



Source: Todd K. Moon. *Error Correction Coding*.
John Wiley & Sons, Inc., Hoboken, NJ, 2005.

Title of the Slide

Slide with a Table

Table: Caption of the Table

Data	Entropy
Plain text	4.347
Native executables	5.099
Packed executables	6.801
Encrypted executables	7.175

Source: Robert Lyda and James Hamrock. [Using Entropy Analysis to Find Encrypted and Packed Malware](#). *IEEE Security & Privacy*, 5(2):40–45, March/April 2007.

**Thank you for your
attention!**

Q & A

