

Visualization for Hidden Patterns in Bible



Bible as a Data



Motivation



Brainstormings

(Please take a look if interested!)



Expectations

Haeji Jung
CPSC 547 Information Visualization

Bible as a Data



Bible is a book that ...

Is

time

around 1900 years old (The complete version),
written for ~1500 years, by ~40 authors
renowned for its consistency

space

the most translated book in the world
oldest book in ~3300 languages, complete version ~750 languages
(Good to know: Bible contains 60+ books; the count varies by the denomination)
used as a source for early development of multilingual language models!

Contains

content

a lot of History & Philosophy

form

vast amounts of cross-references and metaphors
good source of analysis for theologians!



Motivation

Some knowledge I've heard about Bible from the sermon ...

"... 'Do not be afraid' occurs 365 times in the Bible..."

"... There are seven 'I AM' statements that Jesus declares his divine identity..."

"... The word 'love' in this passage is originally 'agape' in Greek, which means..."

and more!



Motivation

Some knowledge I've heard about Bible from the sermon ...

"... 'Do not be afraid' occurs 365 times in the Bible..."

Analyzing n-grams

"... There are seven 'I AM' statements that Jesus declares his divine identity..."

Relevant meanings from seemingly irrelevant words

"... The word 'love' in this passage is originally 'agape' in Greek, which means..."

Distinct meanings from a single word

and more!



Motivation

Some knowledge I've heard about Bible from the sermon ...

Bible Text



Literary Analysis by Theologians or Pastors



"... There are seven statements that Jesus makes his self-revelation..."

Hidden Patterns and Semantics

"... The word love in this passage is originally agape in Greek, which means..."

and more!

Motivation

Some knowledge I've heard about Bible from the sermon ...

Bible Text



Literary Analysis by Theologians or Pastors

with a **Vis. tool**

"... There are seven statements that Jesus makes his self-revelation..."



Hidden Patterns and Semantics

"... The word love in this passage is originally agape in Greek, which means..."

and more!

Motivation

Some knowledge I've heard about Bible from the sermon ...

Bible Text



Literary Analysis by *Anyone*

with a **Vis. tool**

"... There are seven statements that Jesus makes his self-revelation..."



Hidden Patterns and Semantics

"... The word love in this passage is originally agape in Greek, which means..."

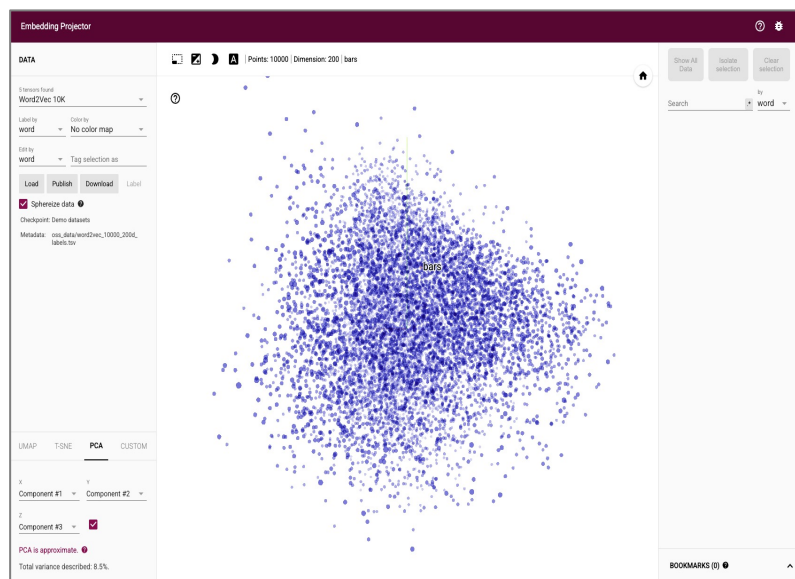
and more!



Brainstormings: *What will help identifying hidden semantics?*

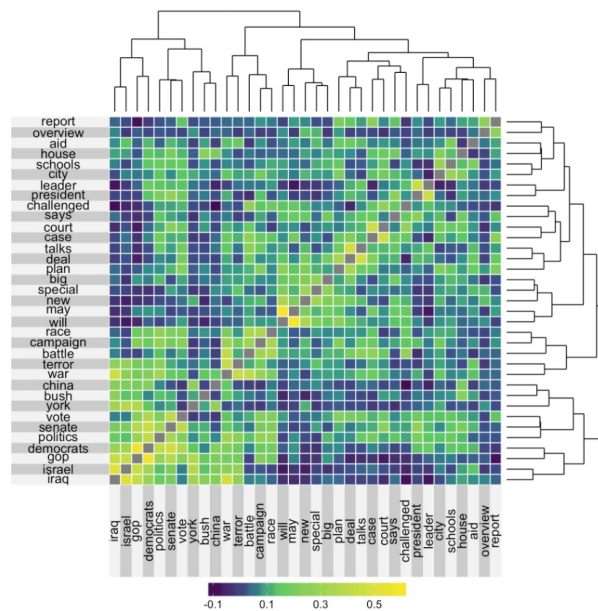
Latent
Semantic
Space

vector space of language models
(preferably pre-trained with Bible text only)



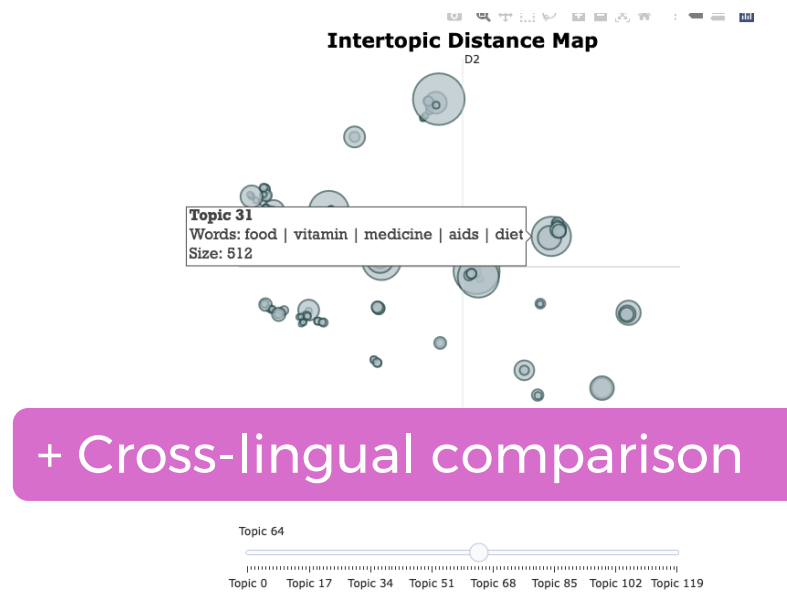
Quantitative
Patterns

co-occurences within a verse / chapter



*Topic
Modeling

visualization of identified topics



+ Cross-lingual comparison

* Topic Modeling: A machine learning technique to draw distinct topics from a given corpus



Expectation

Interdisciplinary Approach

Data Science  Theology

We might come across an interesting finding 🧐

Practical Advantages

Theologians – help literary studies

Bible readers – help investigate what they're reading

Anyone interested in Bible

Thank you