Week 4

Natural Language Processing with Classification and Vector Spaces

Week 4

Discuss this week's modules here.

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Machine Translation and Document Search

Learn to transform word vectors and assign them to subsets using locality sensitive hashing, in order to perform machine translation and document search.

Key Concepts

- Gradient descent
- Approximate nearest neighbors
- Locality sensitive hashing
- Hash functions
- Hash tables
- K nearest neighbors
- Document search
- Machine translation
- Frobenius norm

Less

Lecture: Machine Translation

Video: Overview 1 min — Resume

Video: Transforming word vectors 6 min

Lab: Rotation matrices in R2 1h

Video: K-nearest neighbors 3 min

Video: Hash tables and hash functions 3 min

Video: Locality sensitive hashing 5 min

Video: Multiple Planes 3 min

Lab: Hash tables 1h

Video: Approximate nearest neighbors 3 min

Video: Searching documents 1 min

Assignment: Machine Translation

Programming Assignment: Word Translation 3h — Due Oct 19, 1:59 AM CDT

Reading: Acknowledgements 10 min

Reading: Bibliography 10 min