

Lecture: Machine Translation

- ✓ **Video:** Week Introduction
46 sec
- ✓ **Video:** Overview
1 min
- ✓ **Video:** Transforming word vectors
7 min
- ✓ **Reading:** Transforming word vectors
10 min
- ☰ **Lab:** Rotation matrices in R2
1h
- ✓ **Video:** K-nearest neighbors
3 min
- ✓ **Reading:** K-nearest neighbors
10 min
- ✓ **Video:** Hash tables and hash functions
3 min
- ✓ **Reading:** Hash tables and hash functions
10 min
- ✓ **Video:** Locality sensitive hashing
5 min
- ✓ **Reading:** Locality sensitive hashing
10 min
- ✓ **Video:** Multiple Planes
3 min
- ✓ **Reading:** Multiple Planes
10 min
- ☰ **Lab:** Hash tables
1h
- ▶ **Video:** Approximate

Searching documents

The previous video shows you a toy example of how you can actually represent a document as a vector.

```
word_embedding = {"I": np.array([1,0,1]),
                  "love": np.array([-1,0,1]),
                  "learning": np.array([1,0,1])}

words_in_document = ['I', 'love', 'learning']

document_embedding = np.array([0,0,0])

for word in words_in_document:
    document_embedding += word_embedding.get(word,0)

print(document_embedding)

array([1 0 3])
```

In this example, you just add the word vectors of a document to get the document vector. So in summary you should now be familiar with the following concepts:

- Transform vector
- “K nearest neighbors”
- Hash tables
- Divide vector space into regions
- Locality sensitive hashing
- Approximated nearest neighbors

- Machine translation

- Document search

Practice your skills in the assignment!

Good luck with the programming assignment!

