

Tensors

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Overview

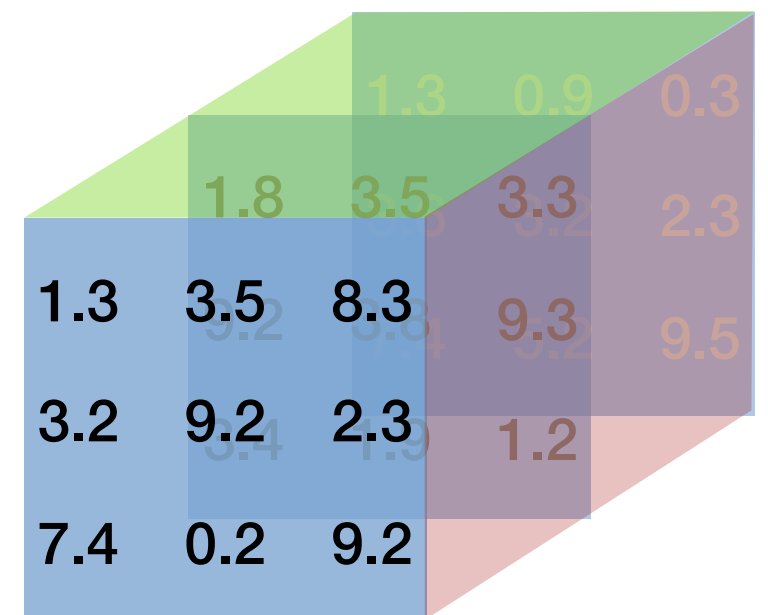
- Tensors: order- d matrices

Tensors

- Notation: \mathbf{T}
 - Bold upper case
- Size: $\text{size}(\mathbf{T}) = s_1 \times s_2 \times \dots \times s_d$
- Order: $\text{dim}(\mathbf{T}) = d$
- Indexing: $\mathbf{T}_{ij\dots k}$

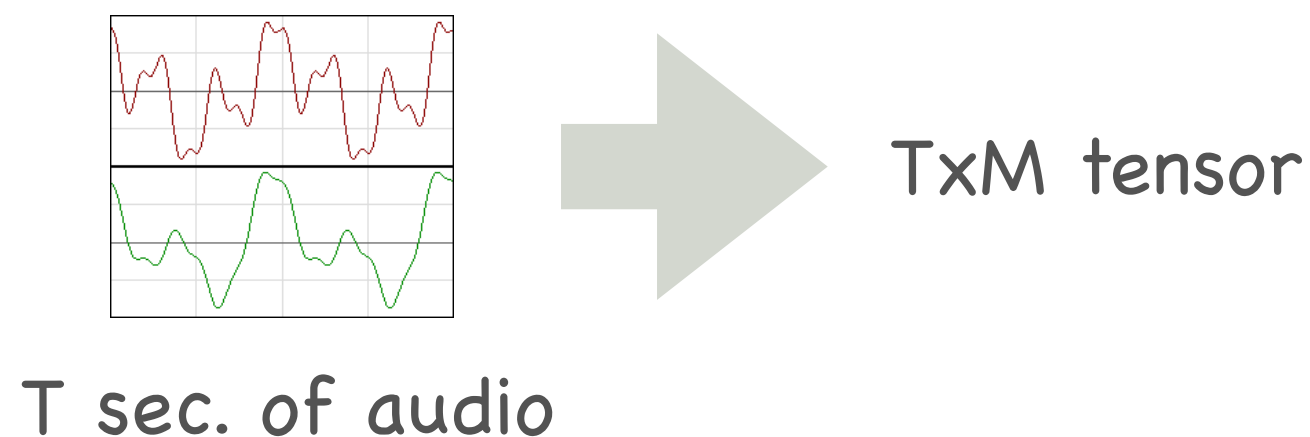
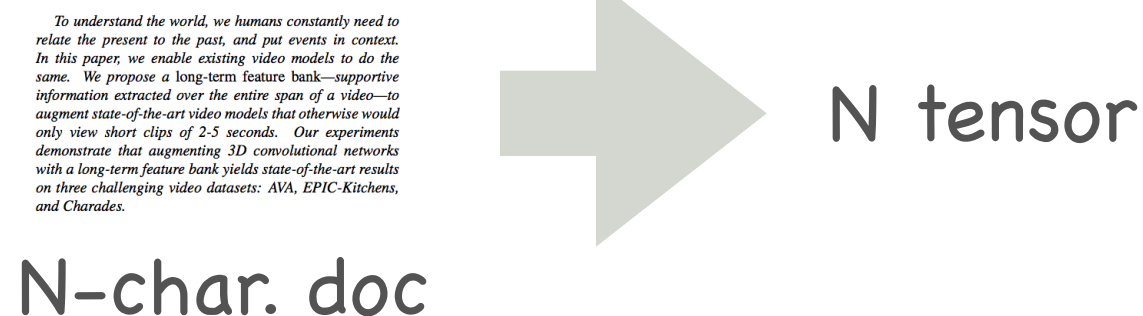
1.2	3.2	5.8
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1.3	3.5	8.3
3.2	9.2	2.3
7.4	0.2	9.2



What are Tensors used for?

- In deep learning: everything
- Data
- Parameters
- Intermediate representations
- Input and output of almost any deep network operation



Summary

- Tensors: order- d matrices
- Basic building block of deep networks