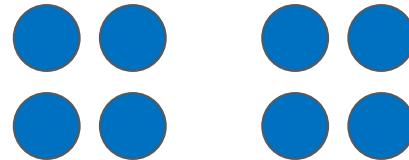
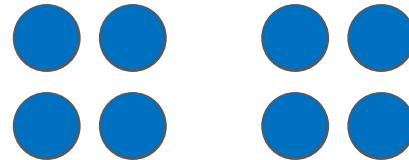
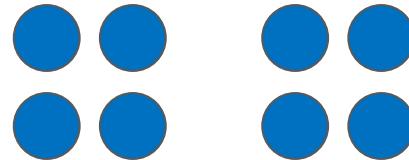
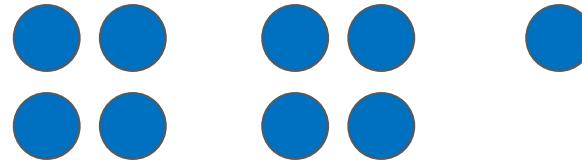


How many circles do you see?



Visualization can help you understand larger patterns



BUT... Visualization can lie. It was actually 17 😬

Visual Analytics

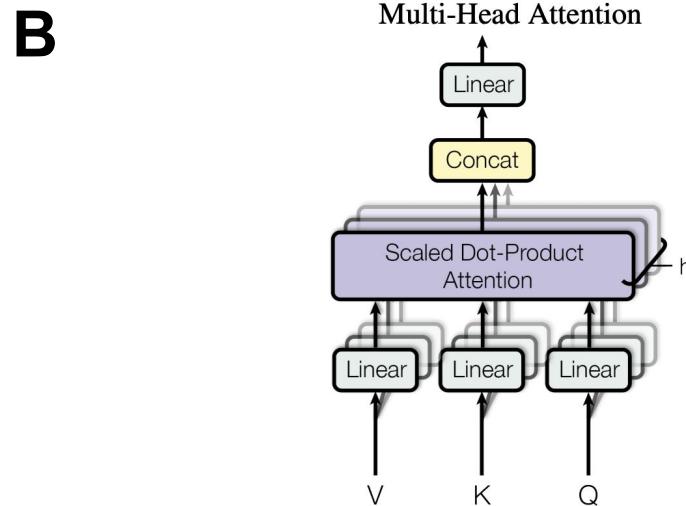
“The goal of Visual Analytics is to make our **way of processing data and information** transparent for an analytic discourse.

The visualization of these processes will provide the **means of communicating** about them”

Why? - Interactive methods help...

... understand difficult concepts

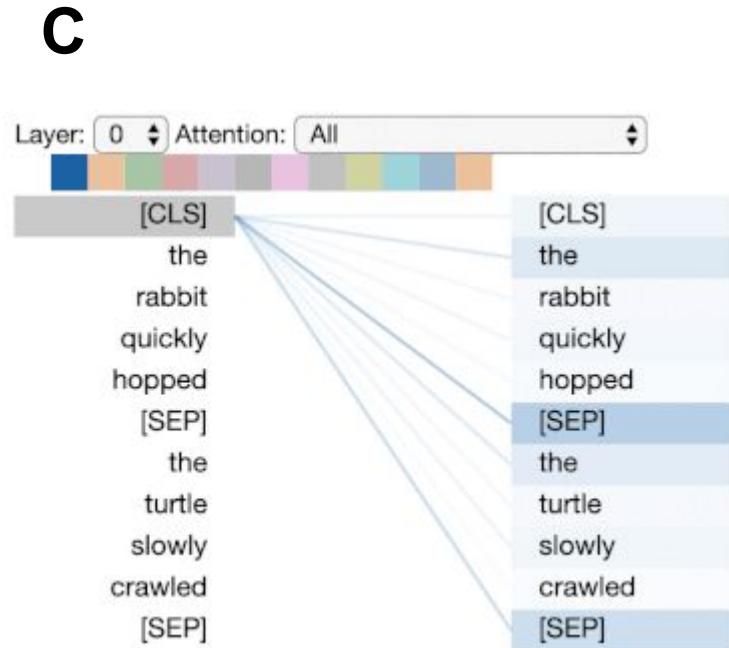
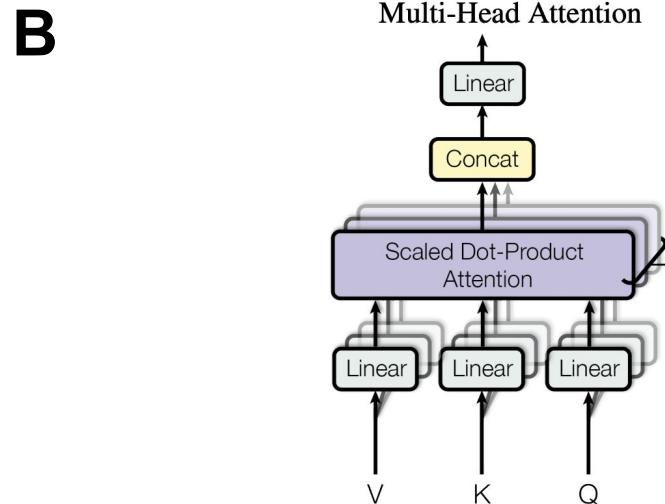
A $\text{Attention}(Q, K, V) = \text{softmax}\left(\frac{QK^T}{\sqrt{d_k}}\right)V$



Why? - Interactive methods help...

... understand difficult concepts

A $\text{Attention}(Q, K, V) = \text{softmax}\left(\frac{QK^T}{\sqrt{d_k}}\right)V$



[Vig. 2019]

"A key element of the visualization approach is its ability to generate **trust** in the user. Unlike pure machine learning techniques, in a data visualization the user "sees" the data and information as a part of the analysis.

When the visualization is interactive, the user will be part of the loop and involved in driving the visualization. In such a context, the development of a **mental model** goes hand in hand with the visualization."

Interactive Visualization Questionnaire

What is the goal of the tool?

Scientific / Pedagogical / Debugging / Debiasing / ...

Understanding model structure / model decisions / data / ...

How do you quantify an outcome? **Generated hypotheses about model behavior**

Who is your user?

ML or NLP Expert/ Domain Expert / Student / ...

How much domain/ model knowledge do they have? **Enough to understand metadata**

The answers will inform the following implementation questions:

Does the tool require interaction with the model? With the data? **Needs to interact with extracted data**

Can you change the model structure or model decisions? **No**