

# Common Mistakes Students Make

## WRONG

Vectors are arrows

Attention copies words

Softmax changes total value

More heads = more accuracy

Transformers understand meaning

Position encoding adds dimensions

## CORRECT

Vectors are LISTS of numbers  
(arrows are just one visualization)

Attention creates WEIGHTED AVERAGES  
(blends information, not copies)

Softmax creates PROBABILITIES  
(sum always = 100%)

More heads = more PERSPECTIVES  
(not automatically better)

Transformers find PATTERNS  
(statistical correlations, not understanding)

Position encoding MODIFIES existing dims  
(same 8 dimensions before and after)