



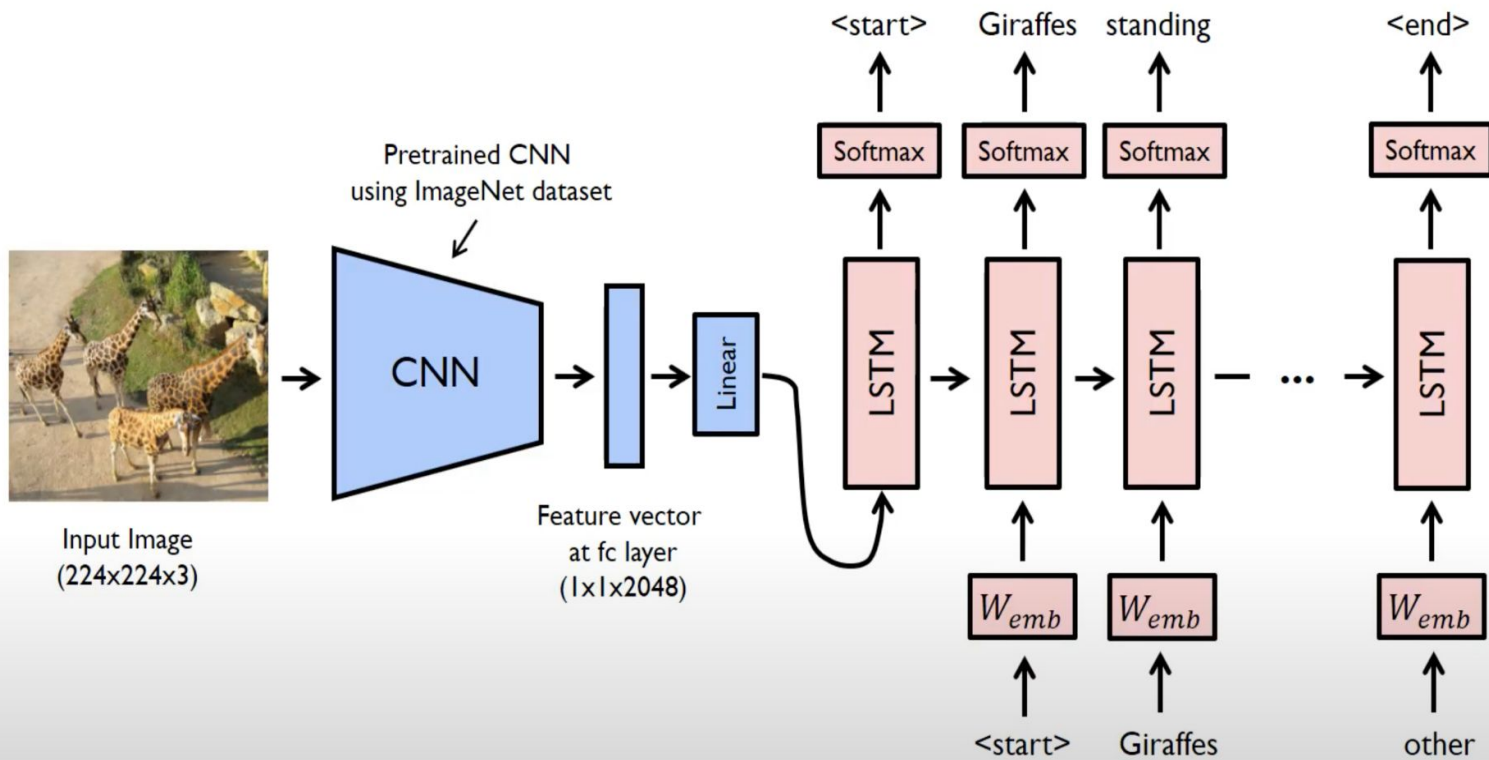
Image Captioning

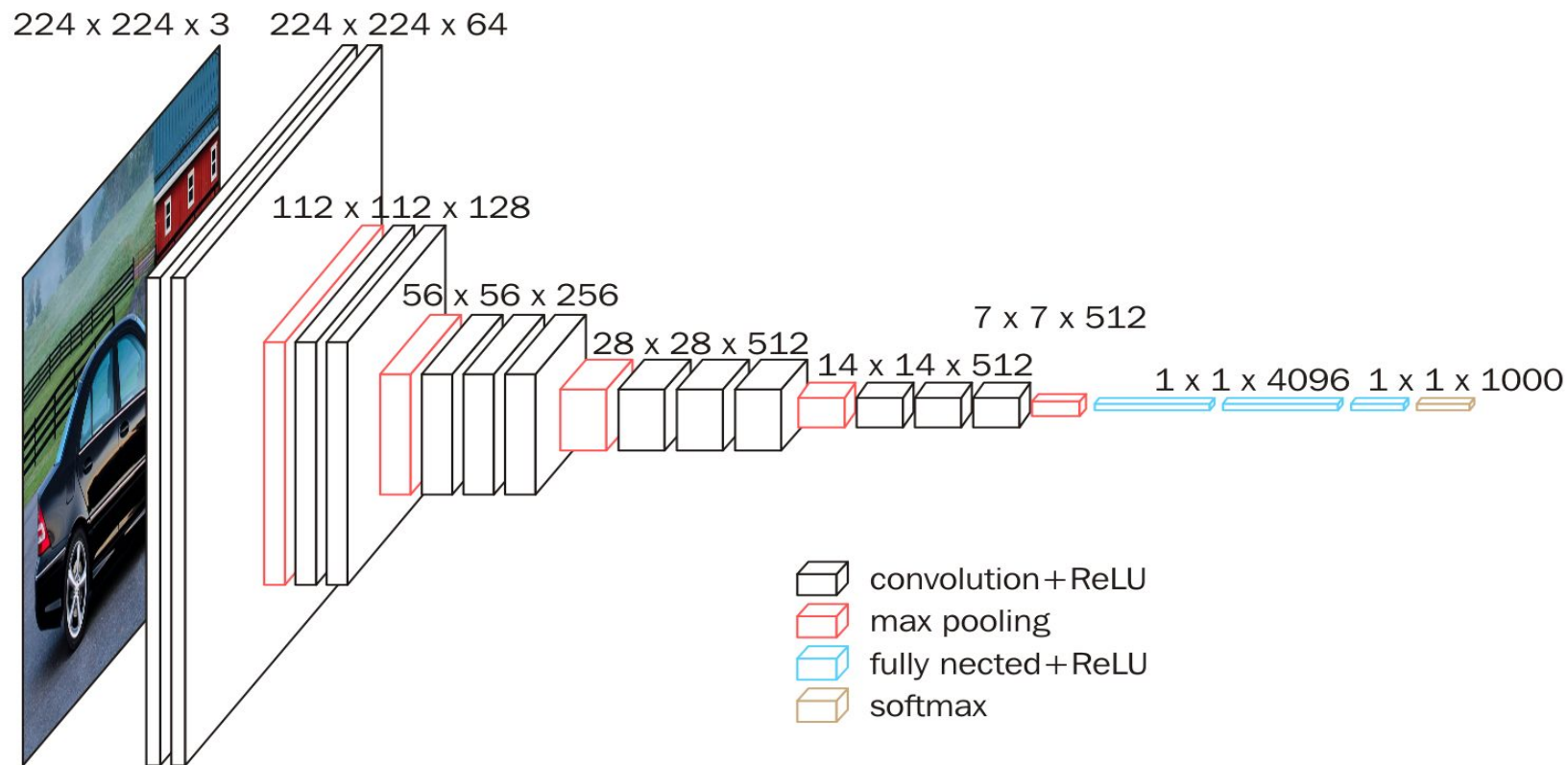
Anni Liu

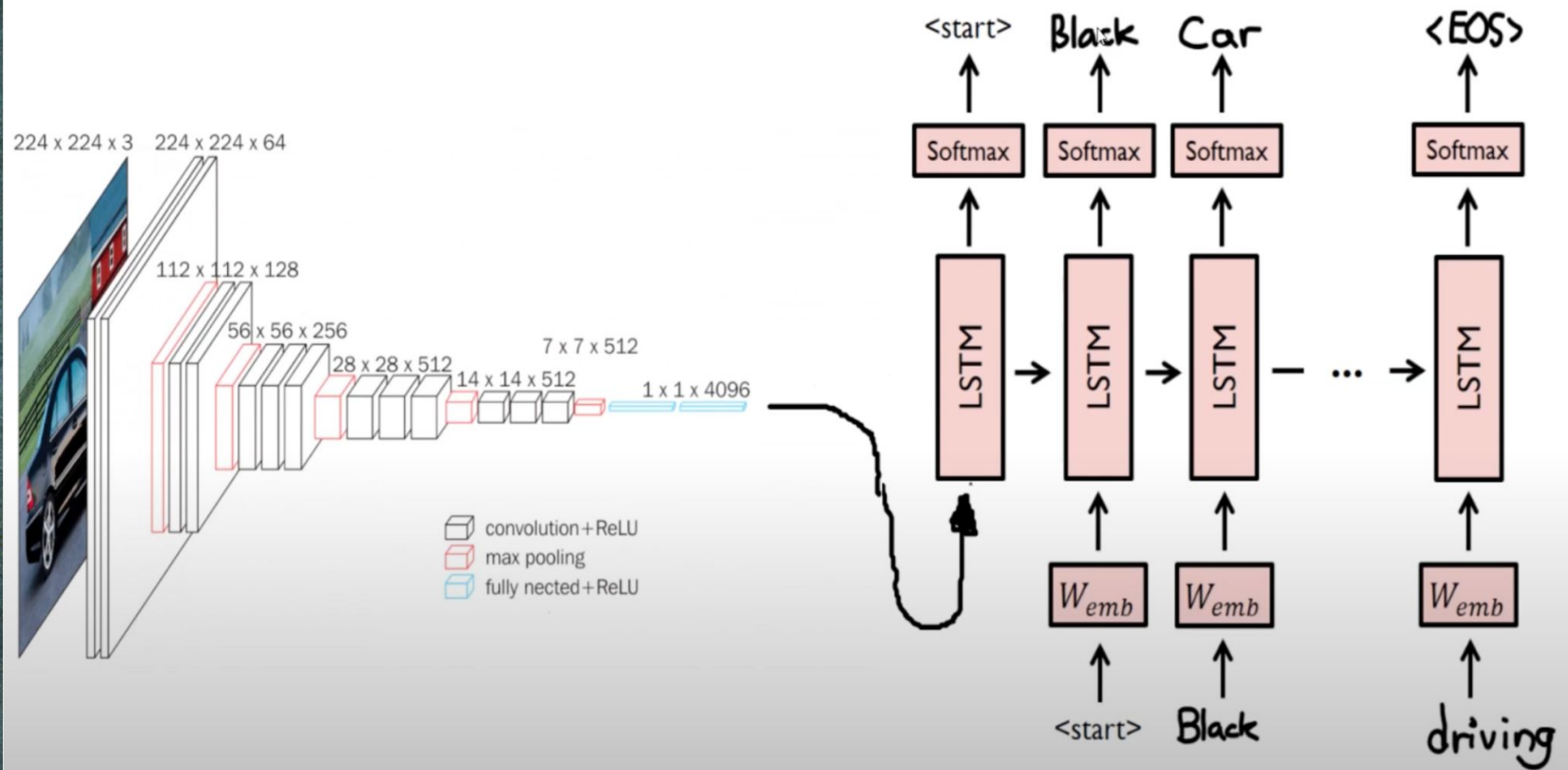
Rahul Bethavalli

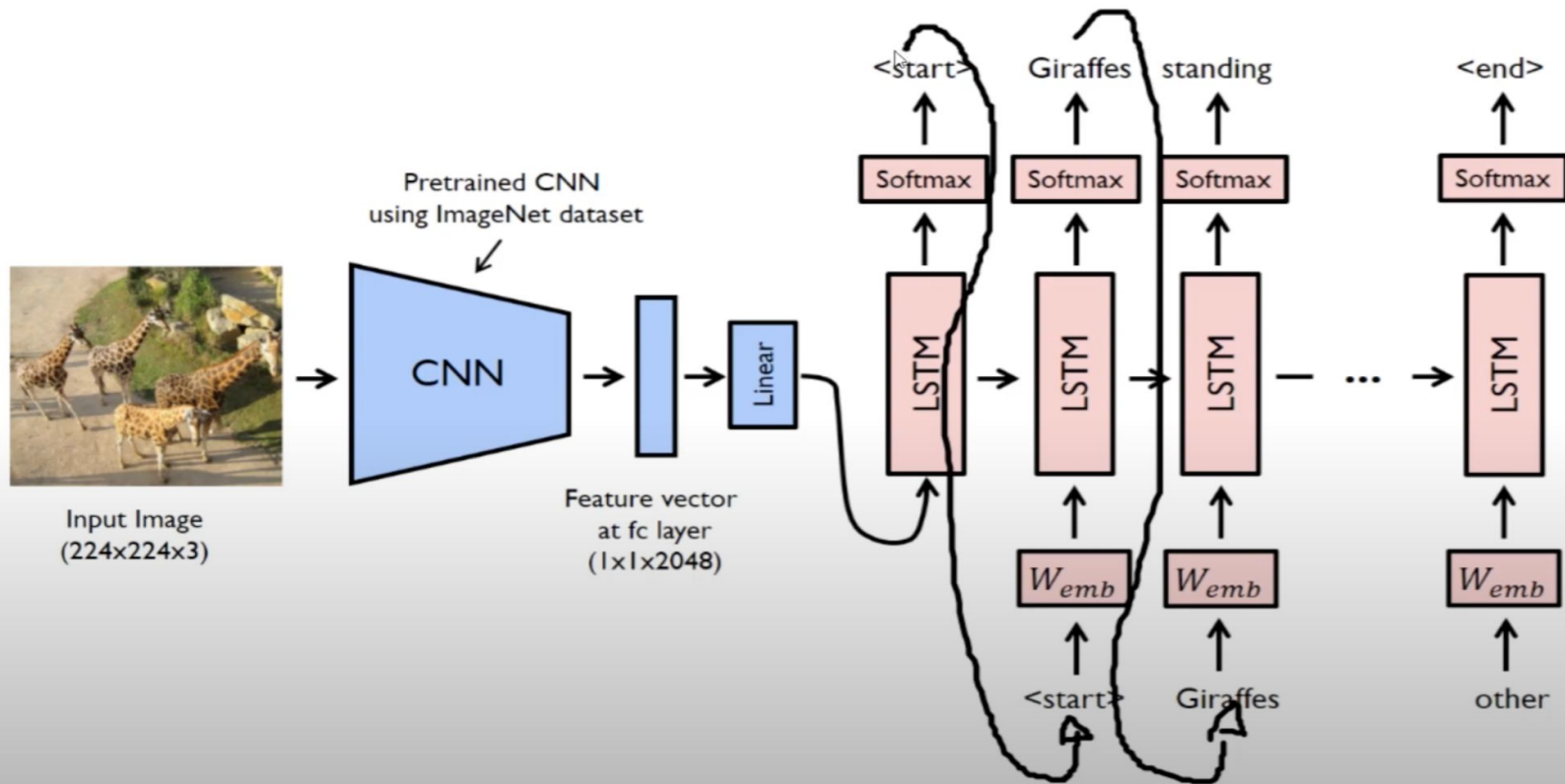
Project Overview

- Generate Automatic Image Captions from a given image
- Flickr8k Dataset:
 - The Flickr30k dataset contains 31,000 images collected from Flickr, together with 5 reference sentences provided by human annotators.











After few epochs

Example 1 CORRECT: Dog on a beach by the ocean

Example 1 OUTPUT: <SOS> a dog is running through the grass . <EOS>

Example 2 CORRECT: Child holding red frisbee outdoors

Example 2 OUTPUT: <SOS> a young girl in a pink shirt is running through a field of grass . <EOS>

Example 3 CORRECT: Bus driving by parked cars

Example 3 OUTPUT: <SOS> a man in a red shirt is standing on a bench . <EOS>

Example 4 CORRECT: A small boat in the ocean

Example 4 OUTPUT: <SOS> a man in a blue shirt is surfing a wave . <EOS>

Example 5 CORRECT: A cowboy riding a horse in the desert

Example 5 OUTPUT: <SOS> a man is standing in the snow with a dog . <EOS>



After 100 epochs

Example 1 CORRECT: Dog on a beach by the ocean

Example 1 OUTPUT: <SOS> a brown dog is running through the water . <EOS>

Example 2 CORRECT: Child holding red frisbee outdoors

Example 2 OUTPUT: <SOS> a little girl in a pink shirt is running through a flowery field . <EOS>

Example 3 CORRECT: Bus driving by parked cars

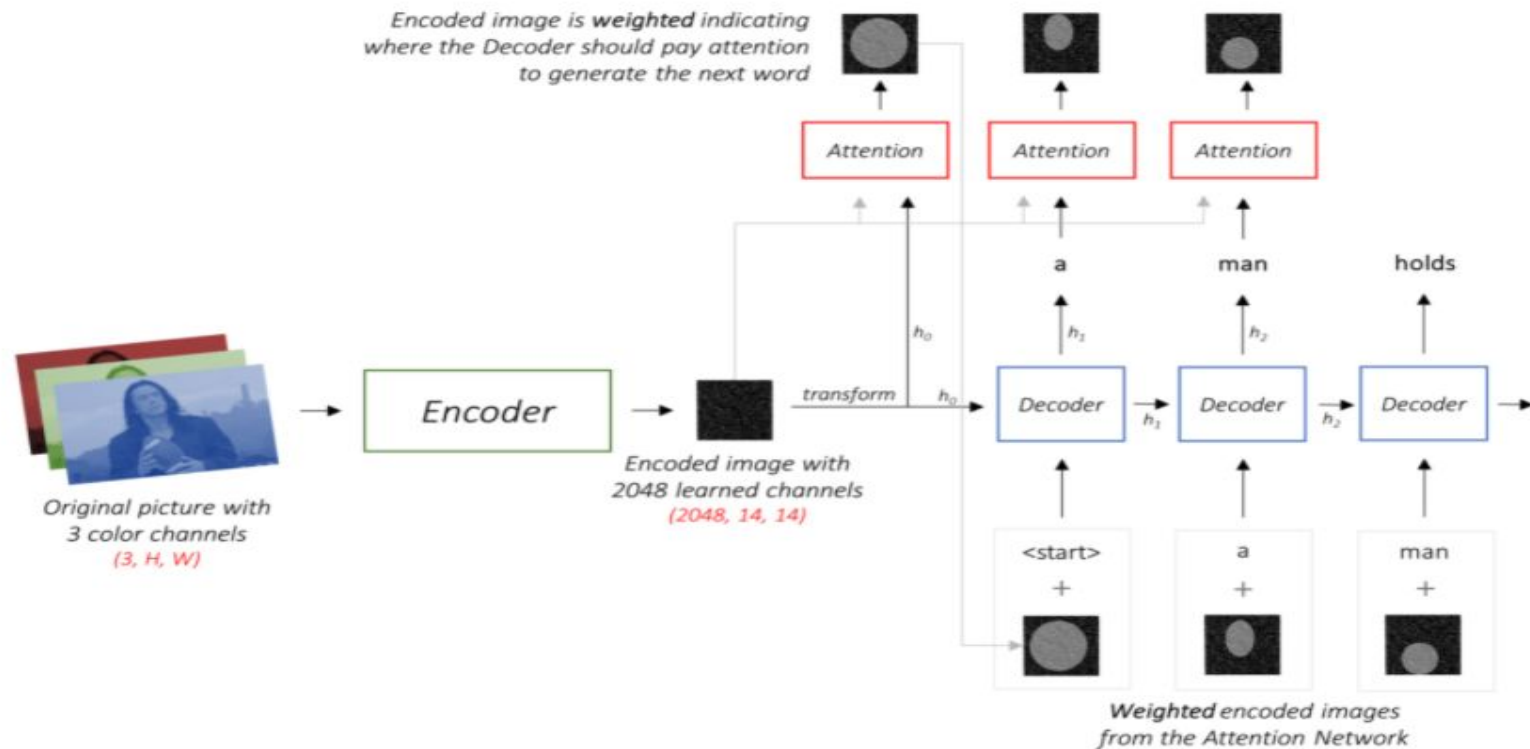
Example 3 OUTPUT: <SOS> a man in a blue shirt is standing in front of a <UNK> shop . <EOS>

Example 4 CORRECT: A small boat in the ocean

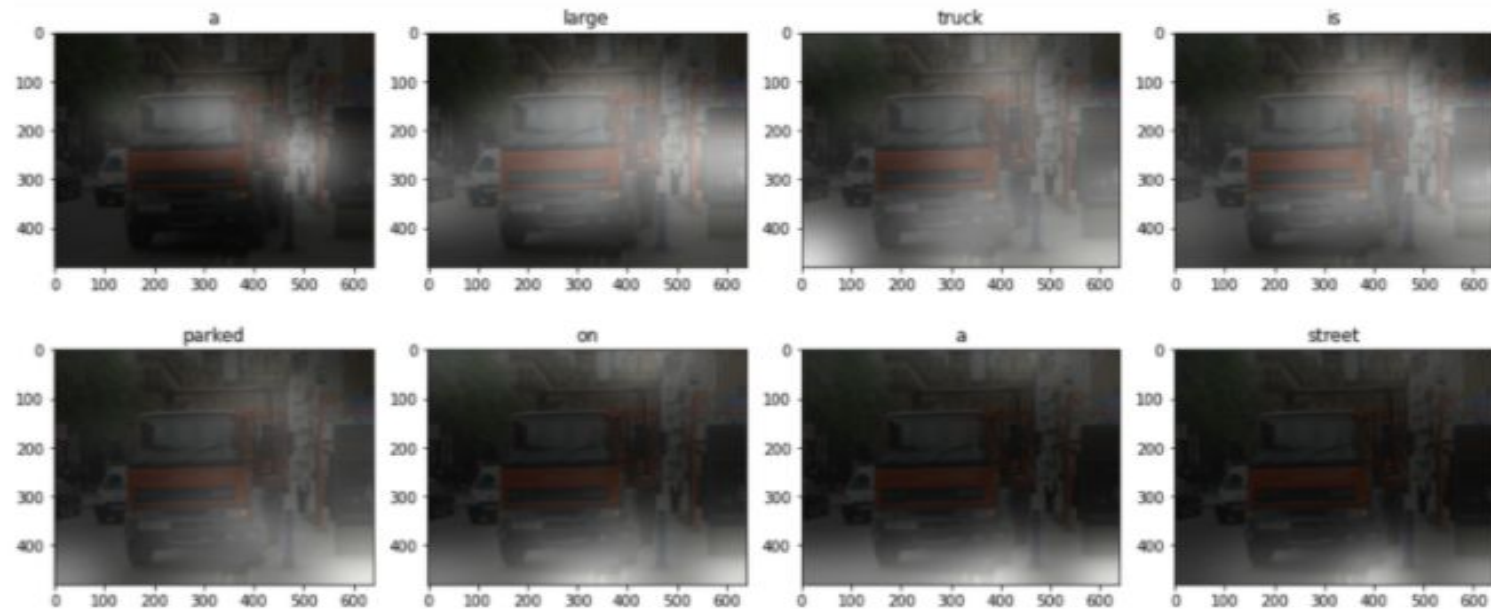
Example 4 OUTPUT: <SOS> a man is rowing a canoe through a lake . <EOS>

Example 5 CORRECT: A cowboy riding a horse in the desert

Example 5 OUTPUT: <SOS> a group of dogs in a field . <EOS>



Visual attention



Summary

- Cannot predict the words that are out of its vocabulary.
- Improvement resulted in the model by adding attention

Future Improvements

- Implement beam search and compare the results with the greedy approach
- Compare the difference in performance using global and local attentions



THANK YOU!