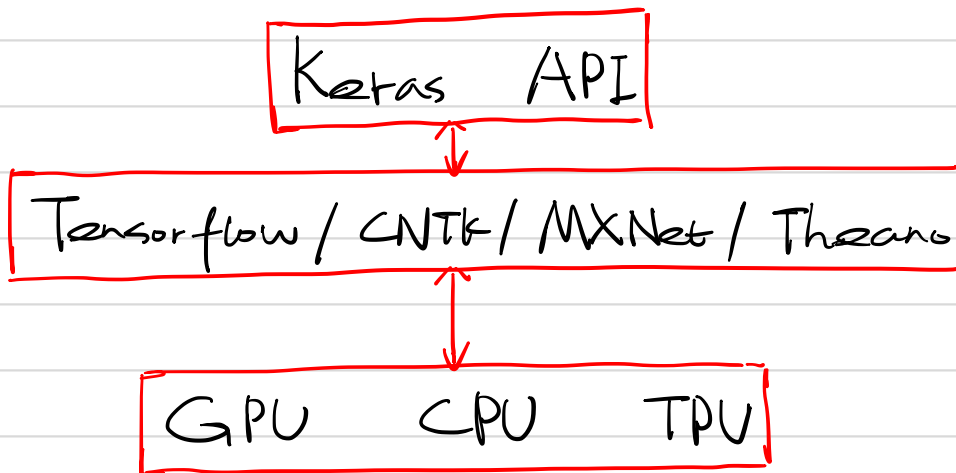


Keras

Keras: an API for specifying & training differentiable programs



1. A focus on user experience
2. Large adoption in the industry and research community
3. Multi-backend, multi-platform
4. Easy production of models

The Keras user experience

1. **Keras is an API designed for human beings, not machines.** Keras follows best practices for reducing cognitive load: it offers consistent & simple APIs, it minimizes the number of user actions required for common use cases, and it provides clear and actionable feedback upon user error.
2. **This makes Keras easy to learn and easy to use.** As a Keras user, you are more productive, allowing you to try more ideas than your competition, faster -- which in turn helps you win machine learning competitions.
3. **This ease of use does not come at the cost of reduced flexibility:** because Keras integrates with lower-level deep learning languages (in particular TensorFlow), it enables you to implement anything you could have built in the base language. In particular, as `tf.keras`, the Keras API integrates seamlessly with your TensorFlow workflows.



Keras is multi-backend, multi-platform

Largest array of options for productizing models

Three API styles:

The Sequential Model

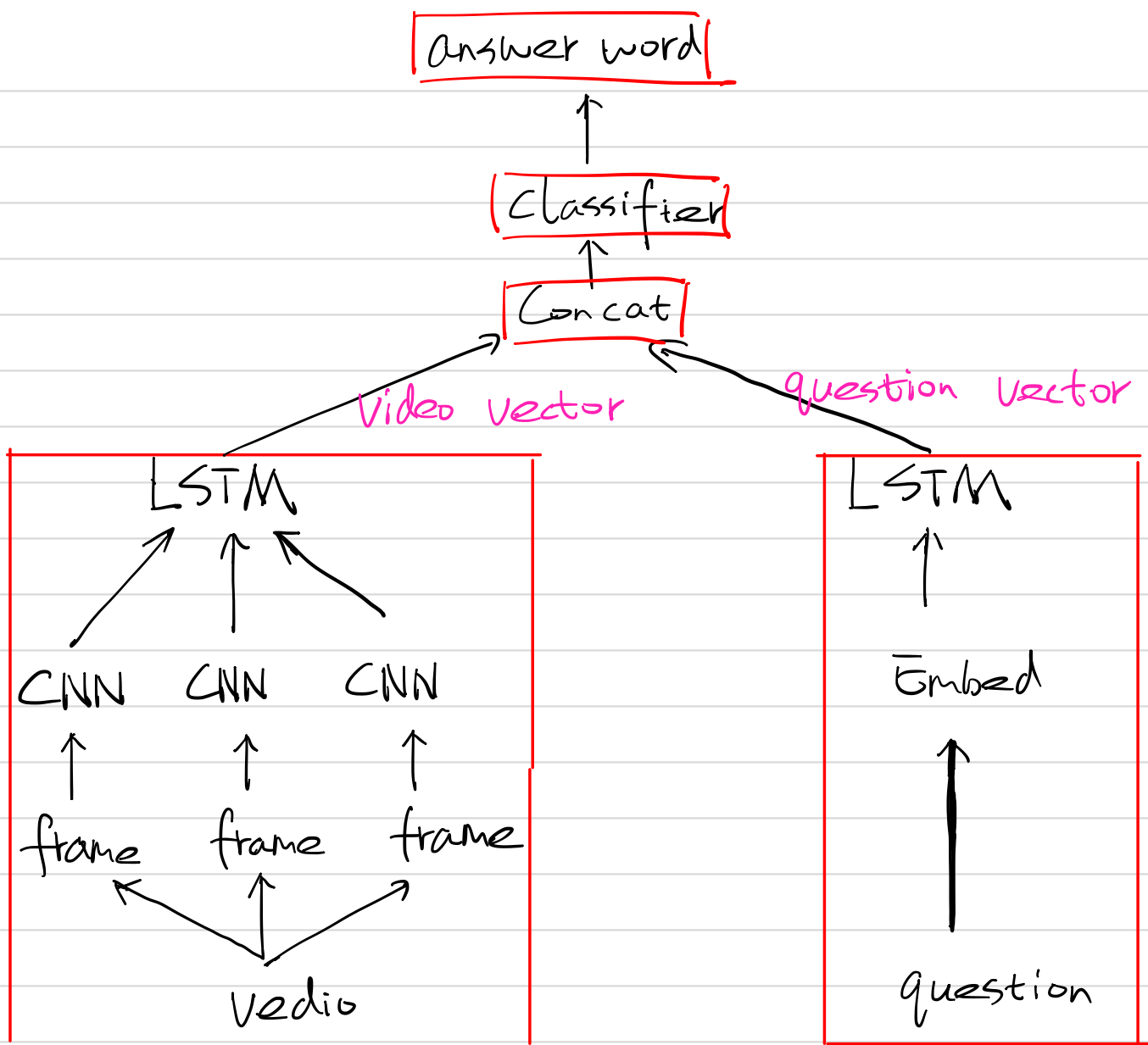
1. Dead simple
2. Only for single-input, single-output, sequential layer stacks
3. Good for 70+ % of use cases

The function API

1. Like playing with Lego bricks
2. Multi-input, multi-output, arbitrary static graph topologies
3. Good for 95% of use cases

Model subclassing

1. Maximum flexibility
2. Larger potential error surface



Distributed, multi-GPU & TPU training

Understanding deferred (symbolic)

VS eager (imperative)