

Preliminary Work

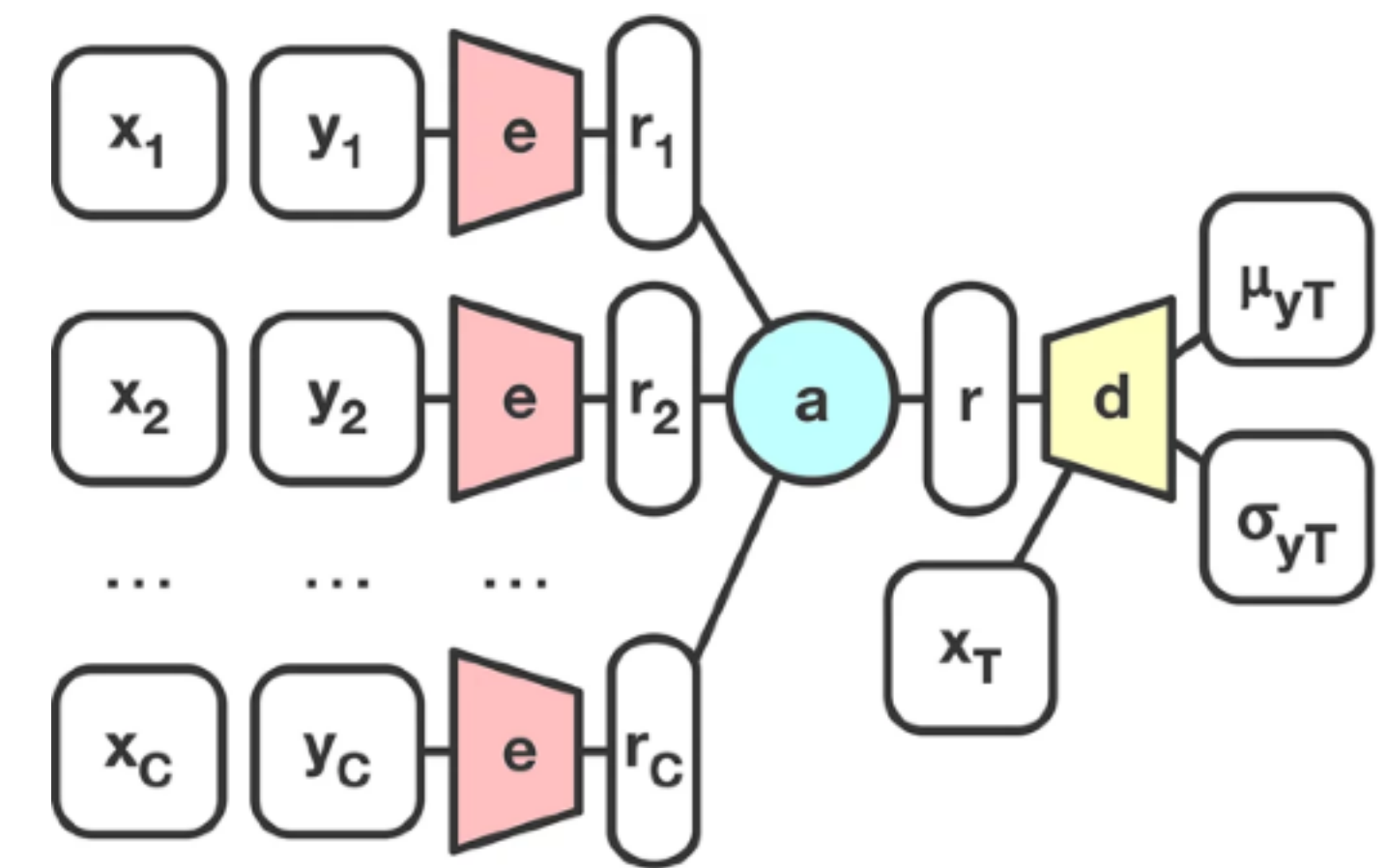
Limitations of MAML

- MAML can capture task uncertainty via one or several gradient updates.
- However, in fake news detection problem, when **events are heterogeneous**, the event uncertainty is **difficult to encode into parameters** via one or several gradient steps.
- Moreover, even support and query data from same event, there's no **guarantee that they are all highly related** to each other.
- In such a case, the parameter adaptation on fake news detection loss on support set may be **misleading for some posts**.

Preliminary Work

Conditional Neural Process (CNP)

- DeepMind proposed at ICML'18
- The basic idea of CNP is to make predictions with **help of support set** as context.
- Includes four components:
 - The **neural network encoder** embeds each observation in support set into feature vector.
 - The **aggregator** maps these feature vectors into an embeddings of fixed dimension.
 - The query data is fed into **feature extractor** to get the feature vector.
 - Then the **decoder** takes the concatenation of aggregated embedding and given target data as input and output the corresponding predictions.



https://colab.research.google.com/github/deepmind/neural-processes/blob/master/conditional_neural_process.ipynb