Proposed Solution

While carrying out the study and evaluation of the state-of-the-art techniques available, what could be concluded as a general observation about the current state of the proposed solutions can be summarized in two main facts;

- Performance in the two main tasks that are used as benchmark for the fashion domain rose significantly from first attempts, but the benchmark tasks themselves are structured in a very constrained way.

- There is a lack of experimental results, in literature, for an industry relevant benchmark task about outfit generation.

As a consequence of this two facts, in the context of this thesis work the focus has been to provide a novel architecture able to offer performances in line with the state-of-the-art techniques for the benchmark tasks as they are usually carried out in literature, as well as being able, at the same time, to provide industry acceptable performances in an unconstrained version of the outfit generation tasks that makes it viable to be used in an industrial context.

Architecture Description:

Started from designing a classifier able to solve the compatibility task and then reused it to solve the other one. The common approach to the FITB task was based on the idea to add each item in the set of proposed answers to the incomplete outfit separately, thus creating one different outfit for each different item in the answers' set. Since the only difference between these outfits was the item coming from the answers set, the answer composing the outfit with the highest score (the probability of being "compatible") was chosen as the predicted missing item. Another problem faced in literature was the way to deal with outfits of different lengths. Outfits can be considered as sets of unordered items, but dealing with such variable structures is not easy in

the domain of neural networks, since feed-forward neural networks require fixed-dimensions inputs and recurrent neural networks impose an order to the items they process. Worked around this problem by fixing the size of the outfits, i.e. removing all outfits containing less than 4 items and removing the exceeding items from the outfits longer than 4 items.

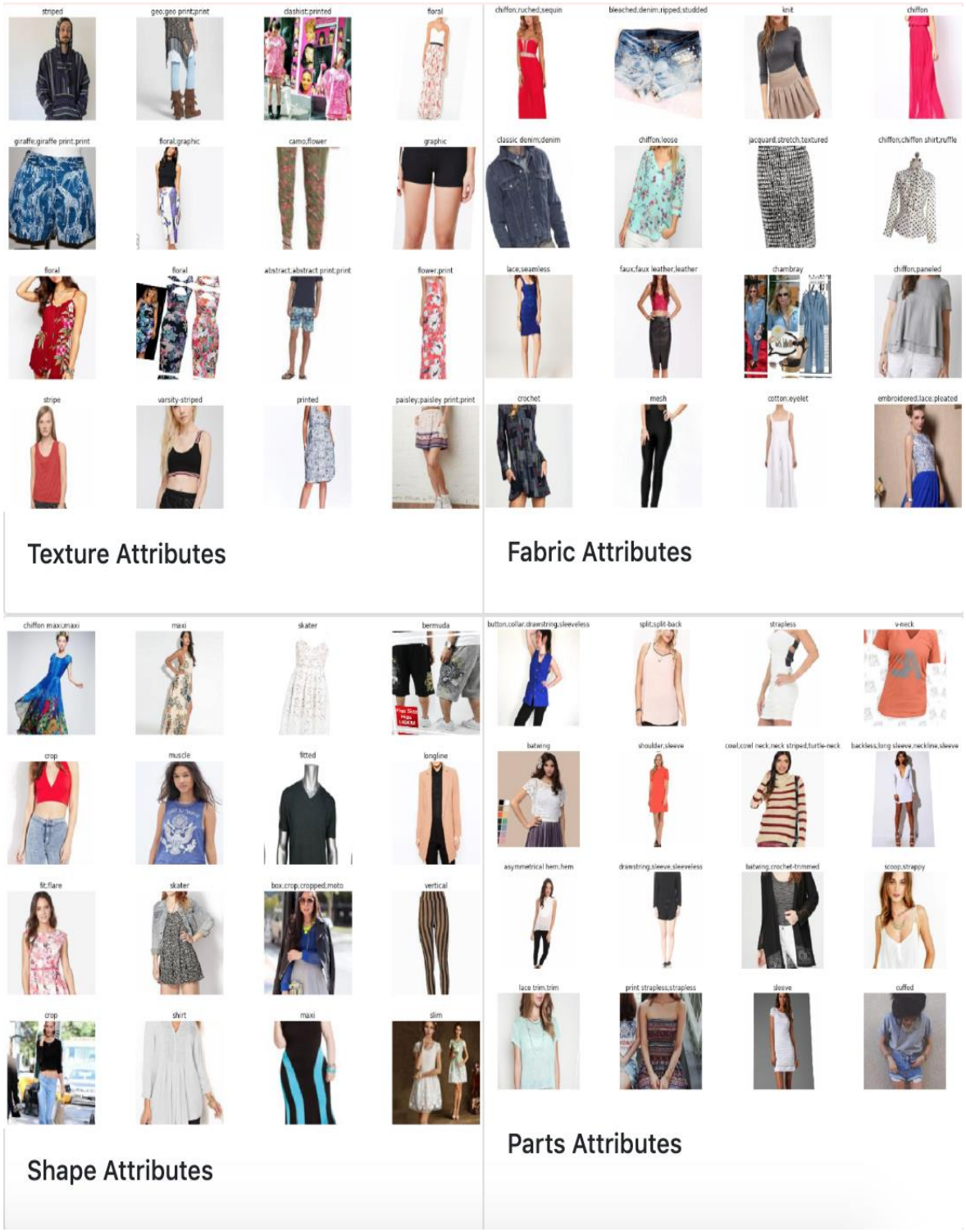

Fig. Proposed solution architecture