**Ideation Phase**

**Literature Survey**

**Smart Fashion Recommender System**

1. L. C. Wang, X. Y. Zeng, L. Koehl and Y. Chen, "**Intelligent Fashion Recommender System: Fuzzy Logic in Personalized Garment Design**," in IEEE Transactions on Human-Machine Systems, vol. 45, no. 1, pp. 95-109, Feb. 2015, doi: 10.1109/THMS.2014.2364398.

Wang *et al.* proposes a new intelligent fashion recommender system to select the most relevant garment design scheme for a specific consumer in order to deliver new personalized garment products.

**Methodology Used :**

* Fuzzy decision trees
* Fuzzy cognitive maps.
* Human perception-based fashion recommender system
* Sensory evaluation

**Merits :**

* The proposed system considers of complex perceptions of both design experts and general consumers.
* The proposed system originally treats human perception on body shapes and fashion themes.

**Demerits :**

* The accuracy of these systems is compromised as the system mostly works on inaccurate data and inputs.
* Update the rules of the Fuzzy Logic control system regularly.

1. X. Zhang et al., "**Trip Outfits Advisor: Location-Oriented Clothing Recommendation**," in IEEE Transactions on Multimedia, vol. 19, no. 11, pp. 2533-2544, Nov. 2017, doi: 10.1109/TMM.2017.2696825.

Zhang *et al.* developed a hybrid multilabel convolutional neural network combined with the support vector machine approach to capture the intrinsic and complex correlations between clothing attributes and location attributes.

**Methodology Used :**

* mCNN - SVM
* AlexNet
* latentSVM

**Merits :**

* Outperforms several baselines by over 10.52–16.38% in terms of the mAP for clothing item recognition.
* Outperforms several alternative methods by over 9.59–29.41% in terms of the mAP when ranking clothing by appropriateness for travel destinations.

**Demerits :**

* This model did not work for large data sets due to overhead.

1. Y. Ding, Y. Ma, W. K. Wong and T. -S. Chua, "**Modeling Instant User Intent and Content-Level Transition for Sequential Fashion Recommendation**," in IEEE Transactions on Multimedia, vol. 24, pp. 2687-2700, 2022, doi: 10.1109/TMM.2021.3088281.

Ding *et al.* proposed a novel Attentional Content Level Translation-based Recommender (ACTR) framework, which simultaneously models the instant user intent of each transition and the intent-specific transition probability.

**Methodology Used :**

* Matrix factorization-based methods
* Deep learning-based methods
* Translation-based methods
* Attribute-involved methods

**Merits :**

* Defined the user intent in fashion domain as the relationship of adjacent items he/she interacted, which is match, substitute or others.
* Proposed item-to-item transition to leverage the rich fashion attributes and model the content-level transitions.

**Demerits :**

* This model did not consider any long-tern intent or intent in certain session.
* The real-world relationships between two fashion items are more nuanced and are limited at category level

1. X. Liu, Y. Sun, Z. Liu and D. Lin, "**Learning Diverse Fashion Collocation by Neural Graph Filtering**," in IEEE Transactions on Multimedia, vol. 23, pp. 2894-2901, 2021, doi: 10.1109/TMM.2020.3018021.

Liu *et al.* has proposed a novel fashion collocation framework, Neural Graph Filtering, that models a flexible set of fashion items via a graph neural network by describing the inter-garment relationship as the edge between nodes.

**Methodology Used :**

* Neural graph filtering
* Style-Diversified Fashion Compatibility
* Style Classifier

**Merits :**

* This approach outperforms the state-of-the-art methods with over 10% improvements on the standard AUC metric.
* More importantly, 82.5% of the users prefer our diverse style recommendations over other alternatives in a real-world perception study.

**Demerits :**

* This process stops if either no candidate exists or the compatibility score including the chosen candidate starts dropping.