Fashionista: A Fashion-aware Graphical System for Exploring Visually Similar Items
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**Goal**
Implement an image-based query system, which provides a graphical interface to help users efficiently explore items that are not only visually similar to a given query, but which are also fashionable, as determined by visually-aware recommendation approaches.

**Example Query**
Visually similar shoes to the query shoe in the space

**Challenges**
1. Use complex similarity measures that are capable of capturing human notions of visual similarity;
2. Index, query, and retrieve visually similar items from a large corpus (e.g., millions of items) efficiently;
3. Capture fashion, which are continually evolving over time.

**Existing Methods**
Amazon's own recommendation interface

**Limitation:** They do not help users retrieve visually consistent items.

Google search engines

**Limitation:** They are not optimized specifically to capture human notions of 'visual style.'

**Use Cases**

**Querying for fashionable advice**
Rachel is hesitant to purchase a dress on Amazon. She personally likes it but is not sure whether it is consistent with the current fashion zeitgeist. She searches for the dress on Fashionista. Fashionista demonstrates the fashionability evolution of the dress's appearance in the past decade, and Rachel finds that it's gaining popularity in recent years. Armed with this information, she decides to purchase the dress immediately.

**Searching substitutes with similar styles**
Lucy finds a pair of shoes (e.g., B004V7858C) on Amazon, but wants to compare them against alternatives that are similar in appearance, but potentially have a preferable brand, price, or rating (etc.). Among items that are frequently bought together, Lucy finds they tend to vary too much in appearance, or otherwise are not visually attractive. Using Fashionista, she quickly retrieves hundreds of visually similar items and finds a shoe of the same style but with a preferable brand.

**Finding complements for outfit generation**
Angelina explores these items and finds several with high fashionability scores that match the style of the t-shirt she is wearing. Fashionista indicates that the t-shirt is preferable in certain trends that are likely to gain popularity in the near future and decides to design products that fit them.

**Querying for statistical fashion trends**
Jennifer is a fashion designer who cares about the trends of contemporary fashion. Using Fashionista, she quickly checks the distribution of popular appearances over hundreds of thousands of clothing and accessory items. She zooms into some areas that interest her the most and observes the corresponding fashion trend evolution during the past decade. She identifies certain trends that are likely to gain popularity in the near future and decides to design products that fit them.

**Conclusion & Future Work**

**Conclusion**
- Built a demo system, Fashionista, with a user-friendly graphical interface to search and explore visually similar and fashionable items.
- Experimentally, we found that Fashionista can index and search large-scale real-world corpora efficiently and effectively.

**Future work**
Enable Fashionista to provide personalized service (once we are able to observe users' interactions with Fashionista).