

# Style recommendations from data scientists

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Amy Winecoff uses her background in psychology and neuroscience to improve recommender systems for shopping. Credit: Duke Research Blog

At the intersection of social psychology, data science and fashion is Amy Winecoff.

After earning a Ph.D. in psychology and neuroscience here at Duke, Winecoff spent time teaching before moving over to industry.

Today, Winecoff works as a senior data scientist at True Fit, a company that provides tools to retailers to help them decide what products they suggest to their customers.

True Fit's software relies on collecting data about how clothes fit people who have bought them. With this data on size and type of clothing, True Fit can make size recommendations for a specific consumer looking to buy a certain product.

In addition to recommendations on size, True Fit is behind many sites' recommendations of products similar to those you are browsing or have bought.

While these [recommender systems](#) have been shown to work well for sites like Netflix, where you may have watched many different movies and shows in the recent past that can be used to make recommendations, Winecoff points out that this can be difficult for something like pants, which people don't tend to buy in bulk.

To overcome this barrier, True Fit has engineered its system, called the Discovery engine, to parse a single piece of clothing into fifty different traits. With this much information, making recommendations for similar styles can be easier.

However, Winecoff's background in [social psychology](#) has led her to question how well these algorithms make predictions that are in line with [human behavior](#). She argues that understanding how people form their preferences is an integral part of designing a system to make recommendations.

One way Winecoff is testing how true the predictions are to human preferences is employing [psychological studies](#) to gain insight in how to fine-tune mathematical-based recommendations.

With a general goal of determining how humans determine similarity in clothes, Winecoff designed an online study where subjects are presented with a piece of clothing and told the garment is out of stock. They are then presented with two options and must pick one to replace the out-of-stock item. By varying one aspect in each of the two choices, like different color, pattern, or skirt length, Winecoff and her colleagues can distinguish which traits are most salient to a person when determining similarity.

Winecoff's work illustrates the power of combining algorithmic recommendations with social psychological outcomes, and that science reaches into unexpected places, like influencing your shopping choices.

Provided by Duke University

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