Team creates an algorithm for predicting success of fashion models
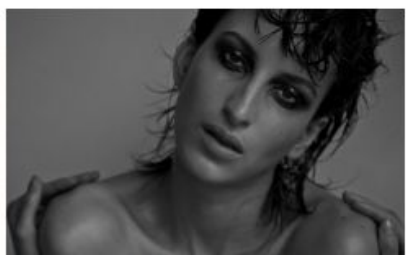
September 3 2015, by Bob Yirka

FMD profiles of the six new faces whose success (having at least one runway during 2015-16 F / W Fashion Week) was correctly predicted by our framework. All images © FMD – The Fashion Model Directory. Credit: Jaehyuk Park et al. arXiv:1508.04185 [cs.CY]

A trio of researchers at Indiana State University has created an algorithm that crunches data used to describe fashion models—adds Instagram influence and then predicts, reasonably accurately, which among a list of models will become successful. Jaehyuk Park, Giovanni Luca

Ciampaglia and Emilio Ferrara have written a paper describing the process they took in creating the algorithm, how they tested it and how accurate it proved to be on a limited number of aspirants—and have uploaded it to the *arXiv* preprint server.

Modeling is a tough business to break into—many try and never succeed. Most who try are aware that their ultimate success generally lies in the hands of a few power players in the business—namely casting directors who pick the models they want their agency to use on the runway during what are known as Fashion Weeks—four are held each year, one each in New York, London, Paris and Milan. Such casting directors typically rely on gut feelings, instinct or "buzz"—this got the researchers to wondering if they could simulate what casting directors do on a computer well enough to predict the success of future models.

To find out, they took data from 432 female aspiring models listed in the Fashion Model Directory, the same source used by casting directors—stats such as physical characteristics were downloaded. They also collected information regarding which agency was representing the models and how much experience the model had. The research trio then added another element to the puzzle, one that may not be used by casting directors, Instagram presence—specifically, noting likes, dislikes and comments.

The team then got busy creating an algorithm based on machine learning with weights assigned to different data points—the algorithm then spit out predictions of success for each of the models. In testing their algorithm, they found correlations between success and model height and other physical features, for example, and also for those models represented by more well known agencies. But a model's Instagram account was also important, they found—high numbers of comments tended to be a precursor to later success, though higher numbers of "likes" appeared to actually reduce chances for later success.

The team then tested their algorithm by downloading new model data prior to a [fashion](#) week, and then had it make predictions—it correctly identified six of eight models that were eventually chosen for the runway. The team acknowledges that their algorithm needs more testing with much higher numbers of data sets, but suggest that their work shows that it is possible to successfully apply technology to a field as fickle as fashion modeling.

Abstract
Fashion is a multi-billion dollar industry with social and economic implications worldwide. To gain popularity, brands want to be represented by the top popular models. As new faces are selected using stringent (and often criticized) aesthetic criteria, emph{a priori} predictions are made difficult by information cascades and other fundamental trend-setting mechanisms. However, the increasing usage of social media within and without the industry may be affecting this traditional system. We therefore seek to understand the ingredients of success of fashion models in the age of Instagram. Combining data from a comprehensive online fashion database and the popular mobile image-sharing platform, we apply a machine learning framework to predict the tenure of a cohort of new faces for the 2015 Spring,/,Summer season throughout the subsequent 2015-16 Fall,/,Winter season. Our framework successfully predicts most of the new popular models who appeared in 2015. In particular, we find that a strong social media presence may be more important than being under contract with a top agency, or than the aesthetic standards sought after by the industry.

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