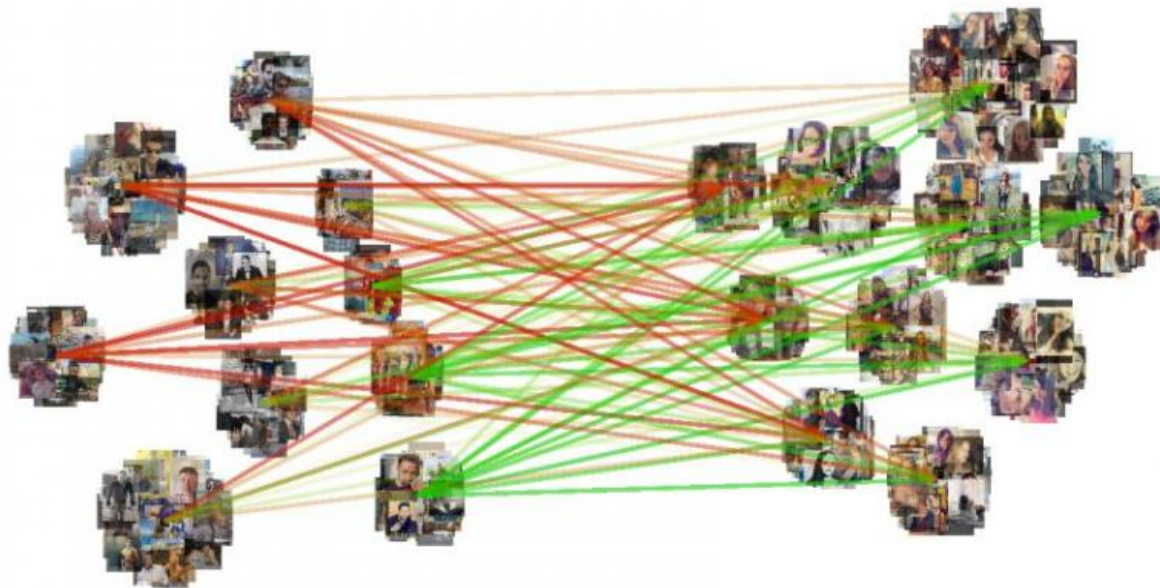# Deep neural networks trained on images help decide who is hot

January 12 2016, by Nancy Owano

Preferences between clusters of users. The color of the arrow indicates how much the men's cluster likes (green) or dislikes (red) the women's cluster on average. Credit: arXiv:1510.07867 [cs.CV]

The Computer Vision Laboratory, ETH Zurich, is branching out into a hotness-judging application leveraging its technology strengths in computer-based interpretation of 2D and 3D image data sets from image sources—both conventional and nonconventional.

The lab has otherwise been more known in its research in fields such as

medical image visualization, scene understanding and modeling. Nonetheless, the lab has stated that it is their strategy to let "difficult, real-world applications drive our research and development. We see collaboration with industry as an important plus for an [engineering lab](#) like ours."

Wow, how much more real-world can you get than a pairing up with the dating app BLINQ for a web [site](#) that invites people to get an attractiveness rating. The researchers harness "artificial intelligence" to rate the attractiveness and age of users on the site.

Can (leave alone, should) [artificial intelligence](#) be used to rate your (and potential mate) attractiveness?

Tech Insider reporter Madison Malone Kircher had an article on this earlier this month. "Do you [consider](#) yourself a stunning beauty or just 'average'? Now there's a website that will tell you for sure where you fall." Kircher said the two—the Computer Vision Lab and BLINQ bring you that site, presenting faces, which guesses age, gender, and then gives people an attractiveness [rating](#).

The site presents a scale of six ratings, from "Hmm..." to OK to Nice to Hot to Stunning and to "Godlike."

The usual question one has in learning of such a tool is how scientific is it, really? The site's creators themselves are the first to deliver a definitive answer. "Please keep in mind the following points when using our tool: Attractiveness is highly subjective and its perception differs from culture to culture. Our algorithm is trained on the pictures of the BLINQ community that is mainly based in Switzerland. In other parts of the world the perception might be very different." They said they do not show results for the under-aged people and do not save the uploaded image.

Evidently, the reminder did nothing to dampen the enthusiasm of people who liked the idea. "Within a couple of hours the website gained large popularity around the world with more than 1 million people accessing the website in the first 12 hours," said the lab team.

The software in question uses deep neural networks trained on images in the millions. Research that went into the website is thanks to the work of Rasmus Rothe, Radu Timofte and Luc van Gool in collaboration with BLINQ. Their paper is titled, "Some like it hot - visual guidance for preference prediction."

The authors stated, in a site section called "research behind the scenes":

"For people first impressions of someone are of determining importance. They are hard to alter through further information. This begs the question if a computer can reach the same judgement. Earlier research has already pointed out that age, gender, and average attractiveness can be estimated with reasonable precision. We improve the state-of-the-art, but also predict - based on someone's known preferences - how much that particular person is attracted to a novel face."

In the abstract of their paper, they said, "We validate the method using a very large dataset from a dating site as well as images from celebrities. Our experiments yield convincing results, i.e. we predict 76% of the ratings correctly solely based on an image, and reveal some sociologically relevant conclusions. We also validate our collaborative filtering solution on the standard MovieLens rating dataset, augmented with movie posters, to predict an individual's movie rating."

Rothe was quoted in the *Evening Standard* on how it has "learned from millions of images of faces how to determine attractiveness, age and gender." The images came from Wikipedia, IMDb and BLINQ's archive, and was determined using pictures and "hot or not" ratings.

A user uploads a photo, and the deep neural network, like an artificial version of the human brain, goes to work to analyze the face with the knowledge of all images it has seen before. Rothe said the network is a bit of a "black box" and it is hard to visualize what exactly it has learned.

More information: www.joinblinq.com/

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