Summary

This proposal outlines an internet project to be accessed via website and application that incorporates facial recognition, data analysis, and AI in order to pair individuals with pets listed for adoption based on facial similarities.

Concept

It's a well-known phenomenon that pets, particularly cats and dogs, resemble their owners. From hair color to eye shape and bone structure, these visual similarities are not a mere product of chance (Roy & Nicholas, 2004). The relationship between human and animal faces is nothing new. A product of shared genetic ancestry, these striking visual correlations inspired the French painter Charles Le Brun to deliver a lecture to the Royal Academy of Painting and Sculpture in Paris in 1671, of which only the accompanying illustrations still exist (Patowary, 2016).
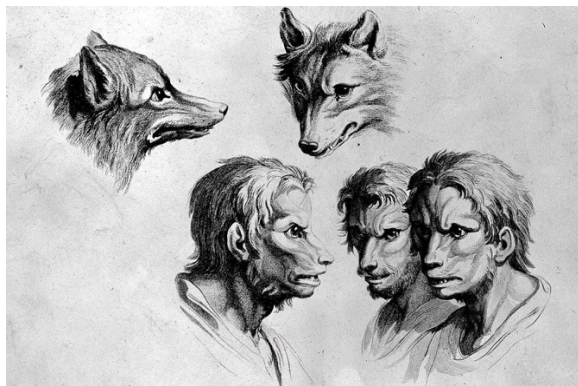
credit: (Patowary, 2016)

Based on research studying the relationship in facial appearance between pets and their owners in the United States (Roy & Nicholas, 2004), Venezuela (Payne & Jaffe, 2005), and Japan (Mosbergen, 2017), these visual similarities are quantifiable, statistically significant, and likely universal. Integrating facial recognition, data analysis, machine learning, and A.I., my proposal for a new pet adoption application and web interface provides a means for users to upload photos of themselves and get paired with pets looking for a new home.

Argument

Facial recognition in non-humans still in an infantile stage. Used primarily for disease detection and determining age, weight and diet to assist in livestock production, this technology can also be used to track populations of endangered species and identify missing household pets (DeGeurin, 2018). Besides the facilitation of pet adoption and the associated results of animal ownership—reduced stress, increased empathy, improved immunity, and cognitive stimulation (Solch, 2016)—this project also provides a novel opportunity to employ facial recognition in non-humans and a means to collect more data on the pet-owner appearance phenomenon. Extending the research of Roy, Nicholas, Payne, Jaffe and Nakajima beyond the borders of Japan, Venezuela, and the United States, adoption of this application will provide the raw data to see if this pet-owner affinity exists universally. Lastly, the majority of these studies focus on purebred pets, primarily dogs, that have established visual characteristics. This application will also be able to see how well the relationship holds true with mixed breeds as well as other species of pets (cats, birds, rabbits, ferrets, etc.) and provide a larger, more diverse sample set for further analysis.

credit: Cesar

Methodology

Through URL and phone application, users will be able to take and upload photos of themselves at uniform angles and perspectives. This data will then be paired with pre-existing pet adoption sites' (adoptapet.com, petfinder.com, etc.) listings and the correlation in appearance will be computed, resulting in a ranked list from most similar to dissimilar pets available within a pre-selected radius. Initially, these computations will be done in accordance to the research cited above, taking facial structures into account along with hairstyle and weight, paying particular attention to the eyes, in conjunction with Nakajima's findings (Bering, 2014).
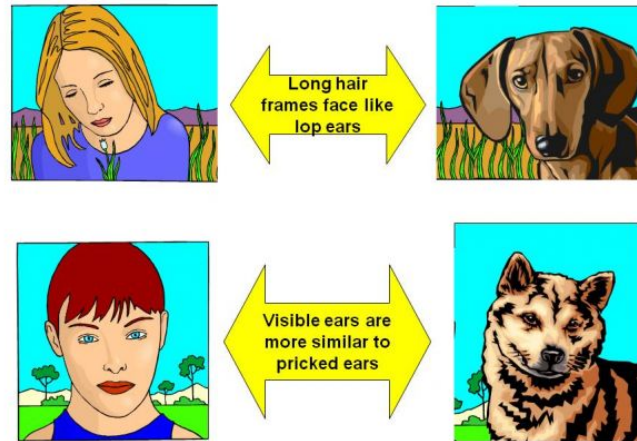
credit: psychologytoday.com

From there, users will be able to click on specific animals in order to read the adoption profiles and make contact with the owners, should they so choose. There will also be a feature for existing pet owners to upload photos of themselves and their pets, resulting in a percentage of similarity, in order to better calibrate the system, allowing it to refine itself over time through machine learning. Expanded search features will allow users to preselect animal species, age, and modify search radius.

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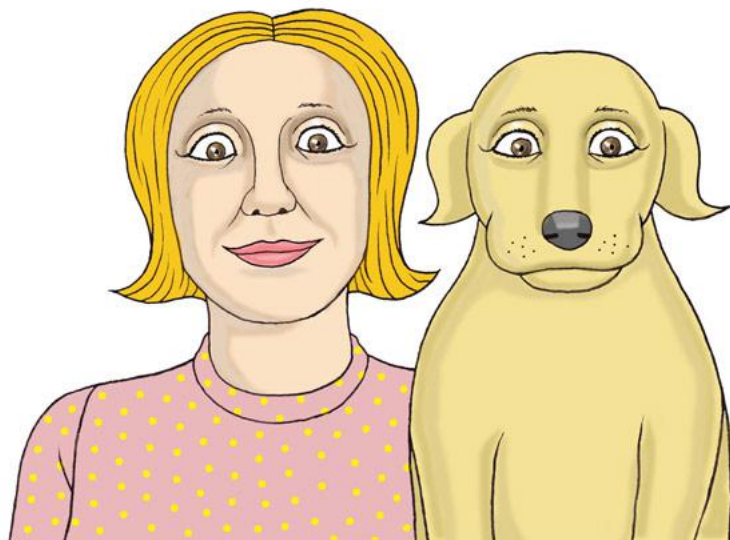
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credit: Slate.com