AI, Big Data: Game changer in fashion

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In today’s fashion-conscious world, most of us would not like to see, or be seen in, ill-fitting clothes. You’re blessed if you can find and afford a good tailor, which is seldom the case. That said, as consumers are demanding a better fit, better look and better return on investment (ROI), brands are finding it increasingly difficult to fully meet these requirements.

To be fair, numerous brands already offer amazing ready-wear collections online that easily catch a buyer’s fancy. However, the single biggest impediment to scale their business globally is ‘Sizing’.

Merely providing a size chart online is no effective solution. First, most users do not understand the complex size charts. Second, many users do not feel comfortable or confident enough to order solely on the basis of an online size chart, which they feel is just “a pool of numbers”.

Can there be another option to enhance the shopping experience of online buyers, and give them confidence to buy online?

AI can provide a credible solution

Technology has become a great leveler and equalizer in this space. With the help of artificial intelligence (AI), and by harnessing advanced computer vision and big data, we can solve the problem of ill-fitting sizes to a very great extent.

Resolving this issue, though, is easier said than done. For one, no two humans look the same and body shape differ too. So, it would be a humongous task to collect the data of over 7 billion people from around the world.

However, there is an ample opportunity to draw a reasonable correlation that can, by and large, be representative of the global population.

To be sure, there is always an allowance of 0.5 -2 inches between two consecutive sizes. Pick any size chart, and you will see the difference ranging between 2- and 6 cm, and more at times. We don’t need to find the upper limit, but this gives us enough of a threshold to build a solution that would apply to 80-85% population, to say the least.

How the tech works

While many companies in this space use uses augmented reality and computer vision technologies to solve user interaction, at Mirrorsize, we made an attempt to find a solution by harnessing big data, computer vision and mesh processing technology.

We work with a user’s Body Mass Index (BMI) data (age, weight and height) and combine computer vision and mesh technology to predict hundreds of body measurement points. As body shapes differ by geography, ethnicity and many other factors, a common factor in most cases is the human bone joint.

Hence, if we can draw a realistic correlation in terms of human bone joints, apply smart data analytics, deep learning and mesh technology, we can provide a solution to predict size by apparel and brand.

This is a good first step but the questions that follow are: How to further improve the accuracy? What other factors could possibly improve accuracy?

The answer lies in major areas of our body -- Chest, Stomach, Natural Waist and Hip. If we can possibly get some inputs on any one (two makes it better), the accuracy goes up by more than 50%. As an example, we acquire the Age, Weight and Height data from a user -- show three images to a user for his upper body shape and ask him – do you look ‘Perfect, Average or Heavy Build’?
Addressing other challenges

Many studies have been done in the past to determine how body shapes change with these factors over time. Once you create a database of body meshes, you can overlay human bone joints by training a large data set (more the data, better it gets) on the body meshes. Then, you can get linear body measurements to a greater accuracy.

The next challenge is to overcome of complexities of predicting girth measurements. To solve this, let us find a correlation between various body shapes and overlay that on the database of body meshes to predict girth measurement.

This is the most difficult part as the upper body shapes are almost of infinite probabilities. Particularly, when you are taking in terms of centimeters. But as the size chart gives us enough threshold, we can determine a meaningful conclusion by training the relationship between various body measurement points. For example: Chest Vs Stomach, Natural Waist Girth Vs Stomach, and so on.

Eating our own dog food

At Mirrorsize, we have developed a solution by combining big data, computer vision and mesh technology to predict body measurements, where we simply ask four questions to a user. To this date, our accuracy is within 0.35 to 5.5 cm (based on 550 sample cases that we’ve tested so far). We are working towards improving this rate.

Here’s a case in point. Dilpreet Kaur, an avid shopper got attracted to an advertisement and was looking to buy a “top wear” online. When she looked at the size chart, she determined her size is “S” and was confident about this. But when we insisted that she use the Mirrorsize app, which predicted XS, she was reluctant to order XS. Fortunately, she did order XS and it turned out the right size for her.

How it can benefit companies

This is good for enterprises too. Retail and ecommerce companies, according to research firm MarketsandMarkets, are focused on making a lot of investment in virtual fitting room solutions to reduce inventory cost, inefficiency, and time wastage.

MarketsandMarkets expects the global virtual fitting room market to grow from $2.9 billion in 2019 to $7.6 billion by 2024, at a CAGR of 20.9% during the forecast period. And it’s hardly surprising that the growing number of smartphone users, improved customer experiences, and increased adoption of technologies are expected to drive the market.

By deploying virtual fitting room platform into the operations, retail and ecommerce companies can offer personalized ads to individual users based on their online activity, the research firm notes. Moreover, it enables personalized retargeting and buying and selling of individual page views in real time.

I believe the more data we train by using deep learning, the more we can improve correlations between major body measurement points (for example, Chest Vs Stomach), and subsequently provide an answer that can reasonably resolve the niggling size predicament of online buyers.

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