

White paper - Artificial Intelligence for Better Lifestyle

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ABSTRACT: "Being healthy and living a healthy lifestyle have always been very important to me." – Stacy Keibler

This white paper demonstrates how AI can help an individual for better lifestyle. We are trying to build a system which guides the user for a better lifestyle through the power of Artificial Intelligence. The system can recommend fashion looks based on user's preferences, weather condition or the event he is going to attend. It can play music according to user's mood or current location. It can suggest food depending on medical data and help the user live a healthy life.

Keywords: lifestyle, artificial intelligence, fashion stylist, better music, healthy food

1. INTRODUCTION

Artificial Intelligence has travelled a long way and has always been on the leading edge of Computer Science. Almost all business sectors have adopted AI to make profit. Although AI helped various business domains succeed, human creativity has always been a major challenge for AI engineers. So now it's the perfect time to put more emphasis on human 'lifestyle' and help every individual have a better lifestyle. Finding the right outfit for the right occasion should not be time consuming or frustrating any more. We should no more go to a professional stylist or bang our head on the keyboard browsing every ecommerce site to get fashion looks that suits us. We should no more consult our family doctor or check all health related apps for healthy food recommendations. We should no more need to create playlists in our music apps for different moods. There are systems available which provide solutions for particular problems. And also some companies have come up with social companion robots (e.g. Maya, Jibo, Alpha, Buddy etc.) which provide little lifestyle suggestions but they remain limited to our home only as a part, we can't carry them with us wherever we go and they are not accessible always. So we are trying to develop a single system which can address all the problems mentioned above and the system should be portable and accessible from anywhere anytime and the best way to go for this is to build an AI based mobile app. Let's discuss in detail how our app can help you in leading a better lifestyle.

2. OUR SYSTEM AS A FASHION STYLIST

Among all the domains of human creativity, the fashion behavior modeling is one of the biggest challenges in this area because of fashion industry trends, individual uniqueness and cultural dependence. Moreover, clothing choice can affect an employee's chance of promotion and a survey done by OfficeTeam in 2007 has proved this. According to this survey, 93% out of 1000 senior managers with 20 or more resources working under them responded that clothing choice affects an employee's chance of

promotion. Although there are many ecommerce platforms with good collection of fashion styles, each and every customer is not a satisfied customer as they struggle to find the styles which suit them. The reason being there are many factors behind perfect clothing like the user's preference, user's personality, weather condition or the occasion the user is attending. Keeping track of all these requires significant amount of time and effort and it may lead some people to seek help from professional stylists. Also hiring a stylist is expensive and not always accessible. This can be solved by using the power of AI and by analyzing user's likes, dislikes and all other factors which come across the way. Let's discuss all the factors and how our AI based system could be the personal fashion stylist.

2.1 Based on user's Look and Personality

AI can recommend clothing styles by analyzing a user's overall look which depends on the following body features:

- Height -> short, moderate, average, tall
- Shoulder and hips -> evenly proportioned, curvy with rounded shoulder, skinny with narrow shoulder etc.
- Face -> balanced, broad, stocky
- Feet -> average, small, narrow, large
- Eyes -> evenly shaped, angular and pointed, large, soft and round
- Hair cut style -> short length, well groomed, smooth, controlled style; long hair with curves and curls; soft and bouncy, never straight and stringy; sleek, asymmetric or geometric cuts etc.

For clothes to look and feel perfect on you they should not only suit your physique but also reflect your personality. When someone says a style describes them, they usually mean that it expresses their personality and suits their lifestyle. Our AI system can help individuals in constantly evolving their lifestyle and can even dramatically change direction within a lifetime.

There are mainly 7 clothing personality styles:

- Classic
- Dramatic
- Natural

- Elegant
- Creative
- Romantic
- Sexy

Most men will find that in reality when they study the different styles. In fact, they are a blend of two or three

different styles. By using AI we can determine the user’s personality from their likes and dislikes of fashion looks. Our AI system helps the individuals to manage blending styles together to suit the expectations of their work and personal goals. [1]

Classic

Classic men possess an attitude of maturity and confidence. They inspire others to trust and have confidence in their abilities. This trust is not betrayed as these men are indeed reliable, loyal and organized. They avoid extremes in most things including clothing which leads them to prefer classic garments rather than anything highly fashionable. For business wear they prefer clothes that project authority, maturity and credibility. The style traits are defined in below table for individuals with classic personality.

| | |
|-------------------|---|
| Clothes | Tailored, semi-fitted, functional, classic styles, natural to slightly extended shoulders, neutral colors for suits, matte fabrics, natural fabrics |
| Hair | Easy to manage, neat and well groomed, classic styles |
| Accessories | Simple classic styles, minimal amounts |
| For business look | Matched suit, classic or button down collars, polished leather lace-up shoes, smooth tie |
| For casual look | Button front shirts and Polo shirts, functionally comfortable clothing, lace-up shoes or sandals, striped shirts and tops |

Dramatic

Dramatic men love attention and power. Their manner is one of supreme confidence and they are always in control of themselves and their situation. Their facial features are prominent and often sharply defined. They take great pride in their appearance. Their clothes reflect an exaggerated strength. Dramatic men are energetic and hence most commonly live in busy cities where they can live life in fast lane. Their occupations can range from high flying professionals lawyers to advertising executives and entertainers.

Style traits:

| | |
|-------------------|--|
| Clothes | Non-classic styles, comfort sacrificed for style, highly structured, sharp extended shoulders, high contrast, crisp fabrics, European styled suits, sharp prints |
| Body | Well built, trim body |
| Hair | Smooth and controlled, slicked back, great in wet look, may have long hair or be bald, color highlights, strong styles |
| Accessories | Puffed pocket handkerchiefs |
| For business look | Stylish fashionable hairstyle, sharp dark European suit in a solid color or pinstripe, polished fine shoes, pointed shirt collars, bold tie |
| For casual look | Slick back hair with gel but maintain some height over forehead, medium color contrast, high fashion |

Natural

These men are friendly, informal, unpretentious and optimistic. They are generally concerned about their appearance and if given the chance would happily live with t-shirts and jeans. Natural men feel best in clothes that are comfortable, relaxed in style and those that allow them plenty of unrestricted movement. These men will not always feel the necessity to iron their clothes. Hence they seek out clothes made from easy care, wrinkle resistant fabrics. Natural men love outdoor activities. Their occupations can range from engineering and teaching through photography.

Style traits:

| | |
|---------|--|
| Clothes | Classic casual styles, softly structured, comfortable, natural shoulders, medium to low color contrast, sportswear, textured jackets, sports jackets, button-down shirts |
| Hair | Easy care styles, tousled hair, little styling products, medium hair, natural shaped beard or mustache |

| | |
|-------------------|--|
| Accessories | Minimal amounts, functional items, caps, woven leather belts |
| For business look | Classic American or British suit, medium to medium dark color, classic or button down collars |
| For casual look | Open neck tops or shirts, sweaters, khakis or jeans, layered clothing, thick soled comfortable shoes |

Elegant

These men are the epitome of refinement, maturity and old money. Every facet of their appearance is well managed to command respect and admiration. They are usually successful and financially secured. They can afford the clothes that are of the highest quality. They can also afford the time it takes to maintain their appearance. The look instantly elevates the wearer's standing and prestige. These are often politicians, state heads, judges, company directors and public figures.

Style traits:

| | |
|-------------------|---|
| Clothes | High quality, fashionably classic styles, superb suits in luxurious fabrics, superb tailoring, rich and elegant colors, low to medium contrasts, clothes that flow over the body, British styled suits, slight to moderately shaped shoulders with slight extension |
| Hair | Classic style, perfectly cut and controlled, swept back or side part, clean shaven or perfectly shaped mustache |
| Accessories | Gold cufflinks, pocket square or handkerchief, highly quality polished shoes, scarves, high quality wrist watch |
| For business look | Superb suit, silk tie in a subtle pattern, high quality shirts with French cuffs, hair/skin/nails perfectly groomed |
| For casual look | Soft fabrics and textures, non-bulky layers, put together with care and attention to detail |

Creative

This style is the most difficult to emulate. A truly creative dresser has an incredible ability to put together completely unrelated garments, patterns and accessories and somehow make them work. Someone without this natural creativity who tries this mode of style ends up looking weird or funny. They seek employment in creative professions such as acting, fashion design, interior design or the art

Style traits:

| | |
|-----------------|--|
| Clothes | Unexpected combinations, split suits, unconventional street style, any style in any combination, any color in any contrast level, mixed textures and fabrics, unexpected use of color, jazzy vests |
| Hair | Styles that require products for hold, any length, bold colors or natural, stylized mustache |
| Accessories | Anything from heavy gold chains to shark teeth, metal studded belts and boots, crocodile or snake type leathers, tattoos, hats |
| To get the look | Strong hairstyle, layered clothing in unusual ways, mix textures and patterns, add unexpected accessories |

Romantic

Romantic men are charming and charismatic. They are quietly confident men whose easy-to-get-along-with nature inspires co-operation and trust from their co-workers. They are adored by women for the genuine respect and affection they show for them. Romantic men feel most at home in clothes that are made from soft and luxurious fabrics and those that are not overly structured.

Style traits:

| | |
|-------------------|--|
| Clothes | Softly structured, comfortably functional, softly extended shoulders, light to medium color for suits, softly textured fabrics, medium to full width pants, low to medium color contrast |
| Hair | Textured or layered, medium length |
| Accessories | Classic watch, puffed pocket handkerchiefs, patterned or softly textured vests |
| For business look | Medium light to medium dark suits, soft wool blends, soft shirts, soften natural looking hair, soft or slip-on shoes, solid colors or texture for suit, quite confidence, polite |
| For casual look | Soft fabrics, open shirt collars, slip-on shoes, soft pants, semi fitted to loose fitting, shirts out or in and loosely tucked |

Sexy

This personal style is unmistakably seductive and masculine. Men who like to dress like this are very confident. They are very body conscious and work hard to create and maintain a strong well defined physique.

The look has one aim that is to be exciting and compelling to women. These men are more likely to be entertainers, night club owners, personal fitness instructors, movie stars or in rock bands.

Style traits:

| | |
|-----------------|---|
| Clothes | Non classic styles, body conscious clothes, tight pants, styles that exaggerate shoulders, leather, futuristic styles, sleeveless t-shirts, body shirts, minimal layering of clothes, no tie, dark colors |
| Hair | Purposely tousled or straight, may have wet look, definite style, fashionable, clean shaven or stylized beard and moustache, dark brown |
| Accessories | Bracelets and rings, pointed toe shoes and boots, metal studded belts, crocodile or snake type leathers, tattoos |
| To get the look | Expose chest and/or upper arms, grease or style hair, define waist, open shirt front, add strong accessories, body conscious clothes e.g. tight jeans and tight sleeves, posture with attitude |

1. Based on Events or Occasions

Our AI system will analyze the event you are going to attend and can suggest the best fashion that suits you.

It will analyze what other people are wearing for such events and will suggest what clothes you should wear so that you won't feel like an odd man out among others.

It will also analyze your friends' pictures (if any) from social networks from the locality of the event to know what fashion they are following and accordingly it will suggest the looks. [2]

2. Based on Current Weather

Our system analyzes the weather forecast and suggests clothing styles accordingly. [3]

For example, to stay cool in hot weather our AI system will suggest below clothing style:

- Lightweight clothing
- A bit see through
- Natural, light fabrics because they dry faster. So it's a bonus when you sweat.
- Hats protect our head from sun
- Choose chinos instead of jeans
- Wear shoes that are breathable along with lightweight cotton or wool socks in fun and bright colors.

OUT SYSTEM FOR MUSIC LOVERS

There are many music apps available in market in which songs from all genres, singers or movies may be available. There are some music apps which provide the option to set mood and then they start playing songs from the playlist which is stored in their database by mapping the mood with the playlist and by the way they are not always perfect. They are great to some extent. But we are trying to take music apps to the next level.

Why not determine the user's mood automatically? Why not recognize the emotion attached to a song from its audio and lyrics itself rather than mapping it to a predefined emotion?

Let me explain why our system will be the only system for music listening.

1. Play music according to listener's mood

Many engineers have come up with algorithms to detect a person's mood and they have done a great job by publishing their white papers. [6][7]

Some of them are listed below:

- Speech emotion recognition using deep neural network and deep machine learning
http://research.microsoft.com/pubs/230136/IS14044_1.PDF
- Emotion recognition by machine learning algorithms using psychophysiological signals
http://www.aicit.org/IJEI/ppl/IJEI%20vol3.no1_06.pdf
- Recognizing Facial Expression: Machine Learning and Application to Spontaneous Behavior
http://mplab.ucsd.edu/~marni/pubs/Bartlett_CVPR05.pdf

Also there's a solution to recognize emotion in music from its lyrics - http://www.ecmlpkdd2013.org/wp-content/uploads/2013/09/MLMU_Malheiro.pdf

By combining the above solutions we can build a single solution which will match our mood with the emotion in music and will play the perfect music.

2. Play music according to user's current location

Our system will detect the current location of the user and start streaming the songs according to the user's

locality. This way user will enjoy listening to local music. Also if detects that the user is present at a famous visiting place, it will recommend music related to that place. Also user will get video recommendations related to the place. [8][9][10]

OUR SYSTEM KEEPS THE USER HEALTHY

Our system analyzes your medical history, BMI, daily routine and calories intake. It suggests foods based on your internal biochemistry using the power of AI. Our system helps you reach your health and performance goals. It does not matter if you want to gain muscle or lose some weight or wish to wake up the next day feeling fresh and ready for action, our system will help you get there by providing smart food choices. [4] There are hundreds of choices available and we decide what to eat based on what we hear, what we read, what we like instead of who we are right now. One food item might be good for your friend but not good for you. Your decisions make your blood biochemistry evolve over time.

Our system also tracks your body activities and suggests you for taking correct actions to keep you fit. If you treat your body right and improve it from the

inside, our system will help you evolve further with new choices and targets. [5]

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