

# Presentation on Project

## DESIGN2WEAR-AI

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# INTRODUCTION:

- ▶ Design2Wear is an innovative platform revolutionizing the fashion industry by seamlessly blending technology and style.
- ▶ At Design2Wear, leverage' s cutting-edge artificial intelligence to create a personalized and sustainable fashion experience tailored to individual preferences.
- ▶ This platform is designed to cater to fashion enthusiasts, event planners, sustainable fashion advocates, and designers seeking to enhance their creativity with AI-driven tools.

# LITERATURE SURVEY:

- ▶ **Dr. Csanák (AI for Fashion)[1]**

Explores how big data and AI (POS, GIS, 3D, sensor data) can transform fashion through advanced pattern analysis and data mining.

- ▶ **Chandadevi Giri et al.[2]**

Highlights AI's role in reducing waste and improving personalization in the F&A industry through smart supply chains, design, and forecasting.

- ▶ **Woojin Choi et al.[3]**

Proposes an AI design system that mirrors human designers' workflows, integrating domain knowledge for realistic garment development.

# PROBLEM STATEMENT:

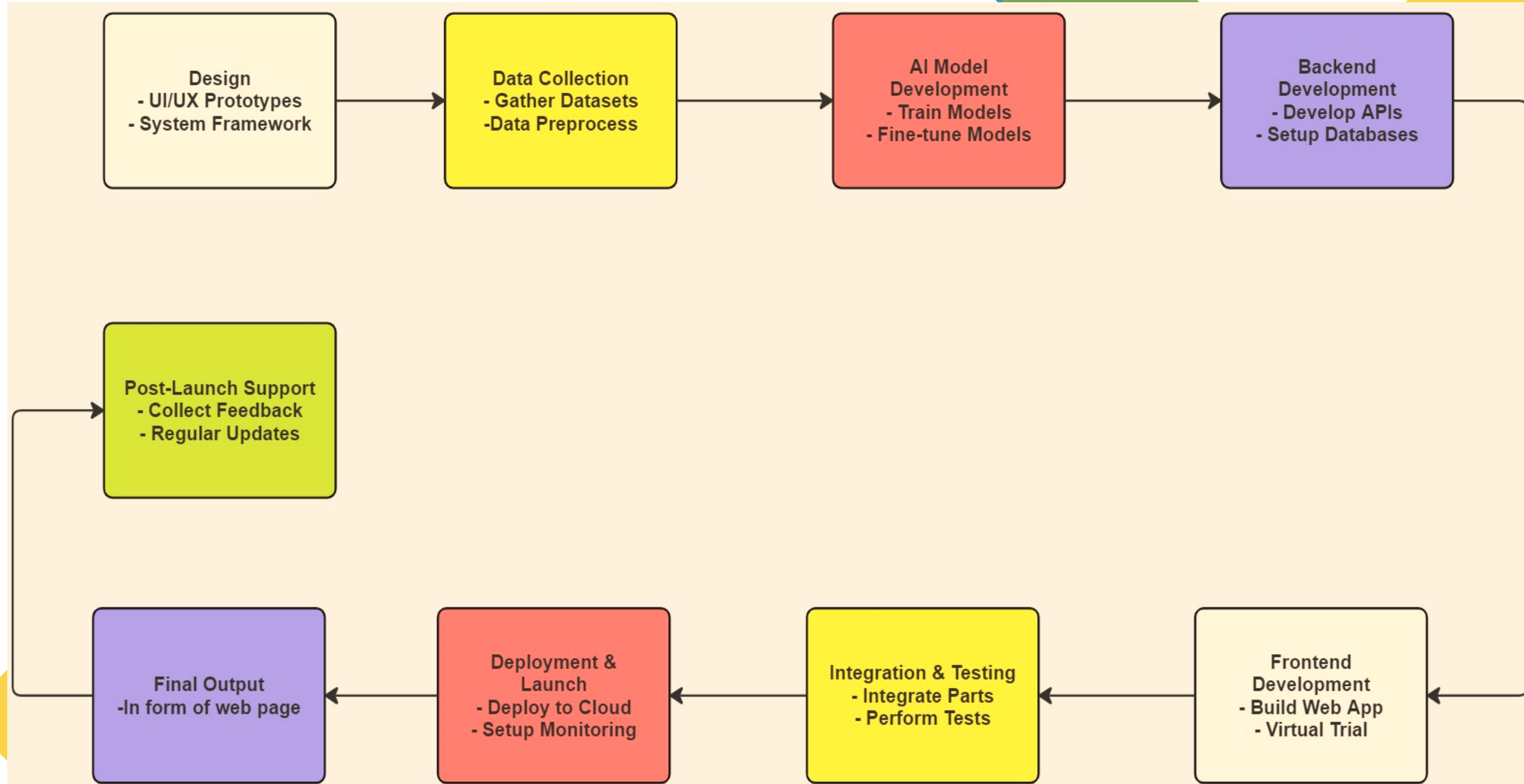
## **AI-Driven Outfit Design & Recommendation System**

Develop an AI system to generate personalized outfit designs based on user input, and provide recommendations for colors, fabrics, styles and accessories.

# OBJECTIVES & SCOPE:

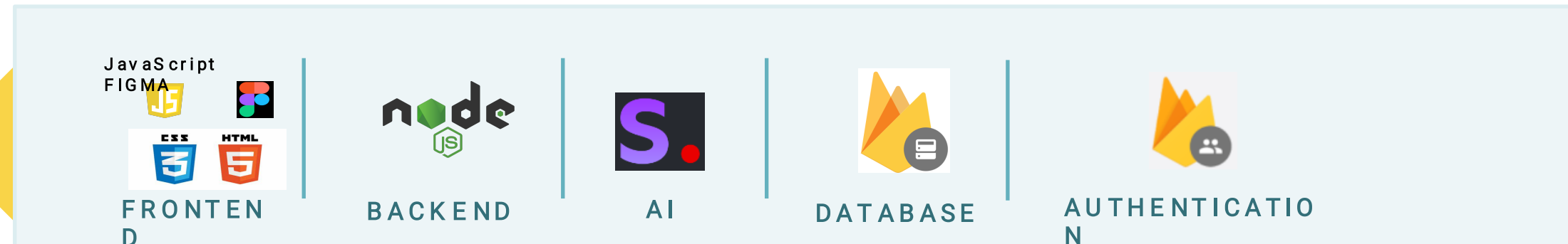
- ▶ **Design:** Create UI/UX prototypes and system architecture.
- ▶ **Data:** Gather and preprocess datasets.
- ▶ **AI:** Train and fine-tune models.
- ▶ **Backend:** Develop APIs and databases.
- ▶ **Frontend:** Build web app and virtual trial room.
- ▶ **Testing:** Conduct thorough testing.
- ▶ **Deployment:** Deploy to cloud and monitor.

# SYSTEM ARCHITECTURE:



# TECHNOLOGIES & SPECIFICATIONS:

- ▶ **Frontend:** HTML, CSS, JavaScript, Figma
- ▶ **Backend:** Next.js & its API routes.
- ▶ **Database:** Firebase Realtime Database
- ▶ **AI Tools:** Stability AI API
- ▶ **Authentication:** Firebase Authentication





# CHALLENGES & LIMITATIONS:

## ► High Computational Requirements

Training models like GANs and handling real-time design generation requires significant GPU resources.

## ► Dataset Dependency

The quality and diversity of designs are limited by the dataset used for training. Incomplete or biased datasets may affect output creativity and inclusivity.

## ► Design Originality & Copyright Risks

AI-generated designs may unintentionally resemble existing styles, raising concerns around originality and intellectual property.

## ► User Expectation Mismatch

Designs generated by AI may not always meet user expectations in terms of aesthetics or fit.

## ► Limited Cultural & Regional Adaptation

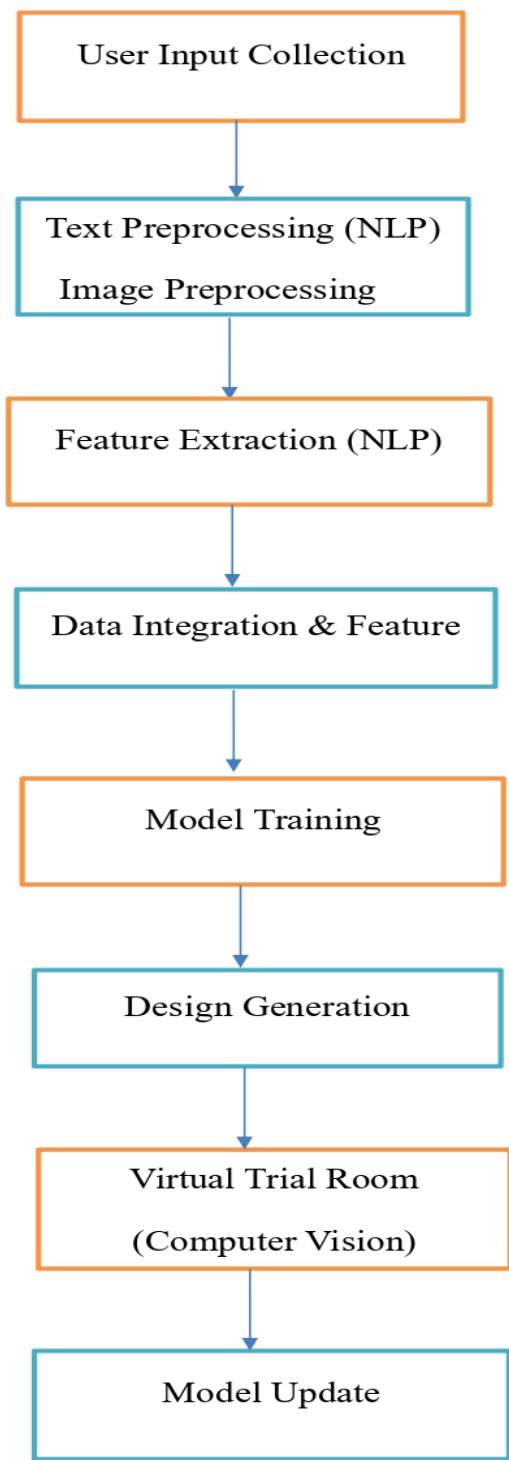
Without targeted data, the AI might not fully reflect diverse fashion preferences across cultures or regions.

## ► Continuous Model Maintenance

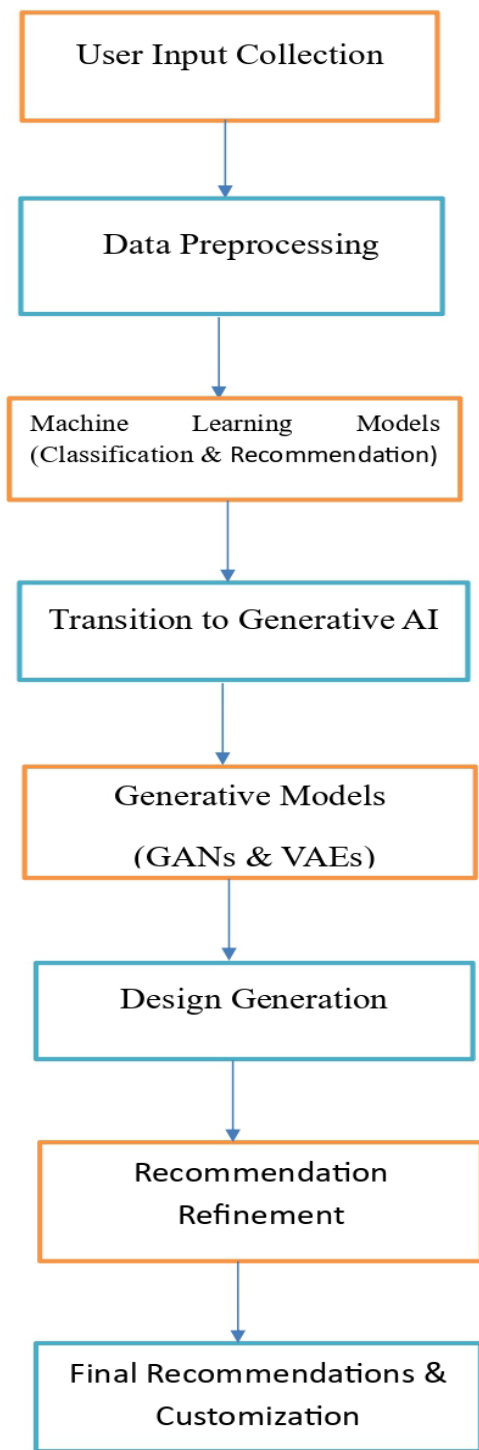
AI models require regular updates to keep up with changing fashion trends and user preferences.

# WORKFLOW DIAGRAM:

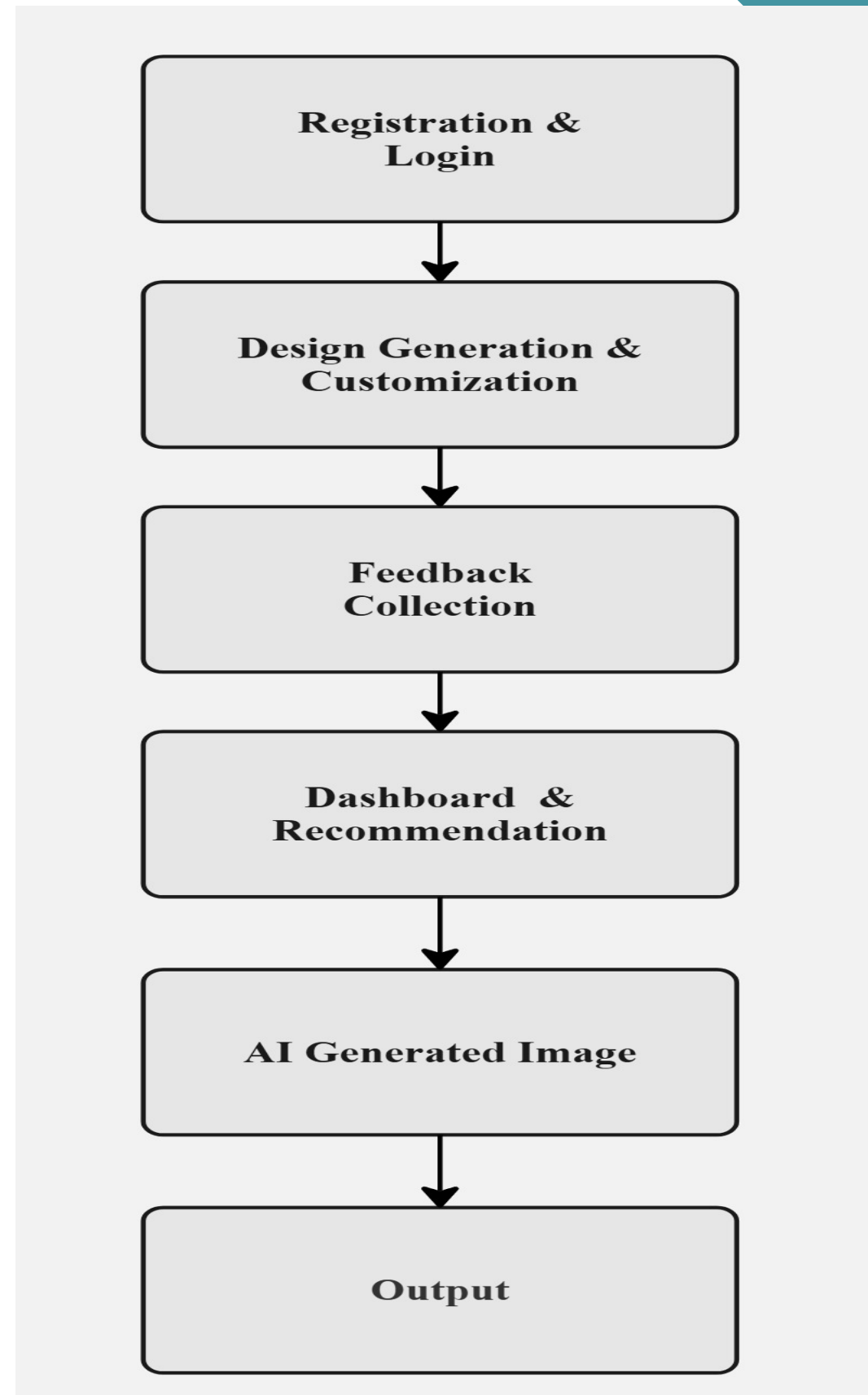
Internal Workflow: NLP to Machine Learning



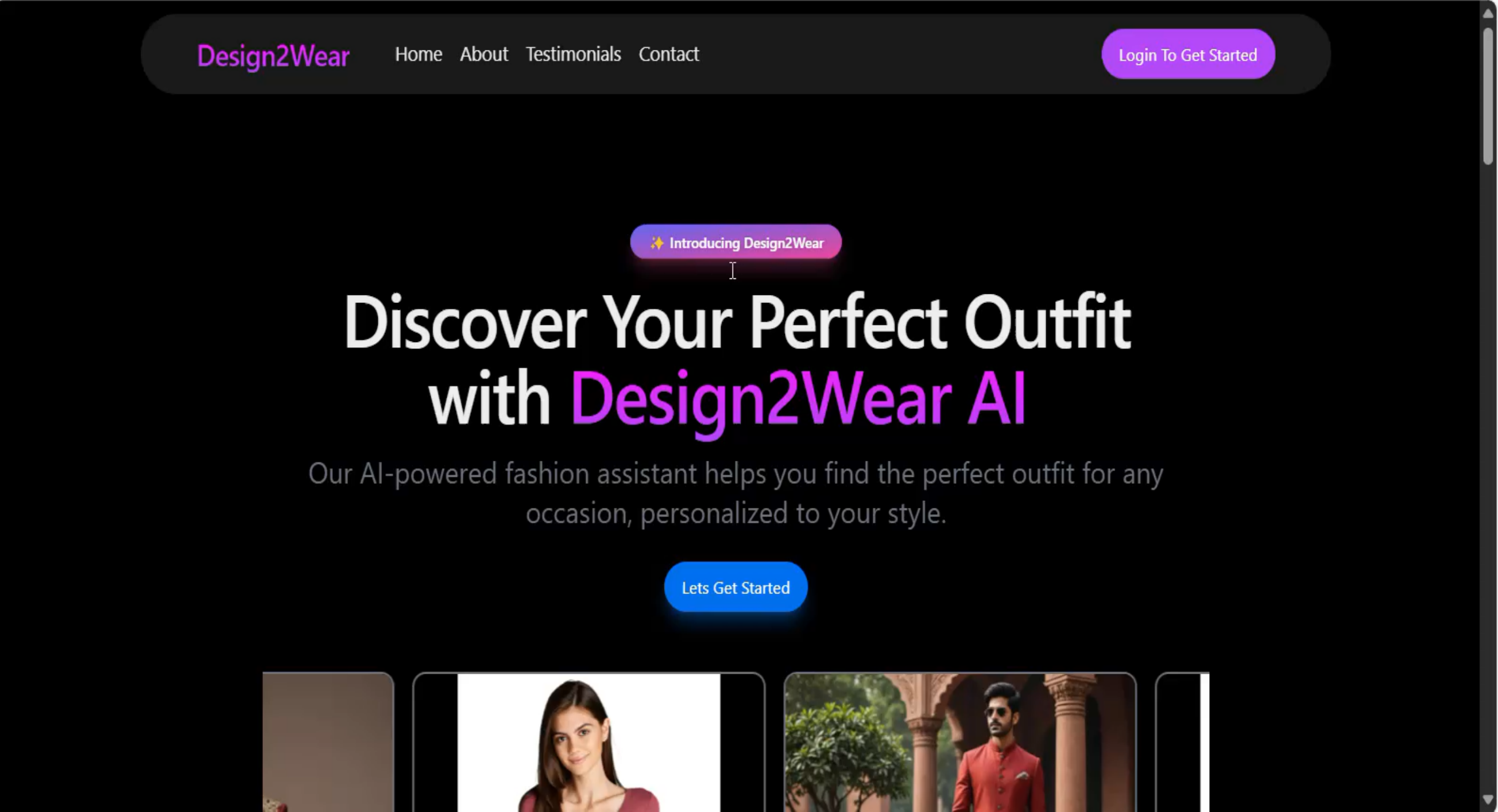
Internal Workflow: Machine Learning to Generative AI for Recommendations



# BLOCK DIAGRAM:



# PROJECT OUTCOMES:



# PROJECT OUTCOMES:

## INPUT:

The screenshot shows a web application for Design2Wear. The header includes the brand name and navigation links. The main heading asks the user to let the AI do magic for them. Below this is a text input field for a specific request. The form consists of several sections with radio button selections for various attributes: color preference, skintone, style preference, occasion, outfit category, gender, season preference, age, fabric preference, and outfit size. A large green button at the bottom is labeled 'GENERATE OUTFIT'.

Design2Wear Home About Testimonials Contact

### Let Design2Wear AI Let Design2Wear do magic for you

How do you want your outfit to be?

Suggest me some outfit design for success party for my sister it should be shiny.

**What is your color preference?**  
White Black Red Blue Green Purple Pink Gray Brown

**What is your skintone?**  
Light Medium Dark

**What is your style preference?**  
Casual Formal Sport Travel

**What is your occasion?**  
Birthday Anniversary Wedding Party Date Work Casual

**Select your outfit category**  
Top Bottom Dress Pants Shorts

**What is your gender?**  
Male Female Unisex

**What is your season preference?**  
Spring Summer Fall Winter

**What is your age?**  
18-25 26-35 36-45 46-55 56+

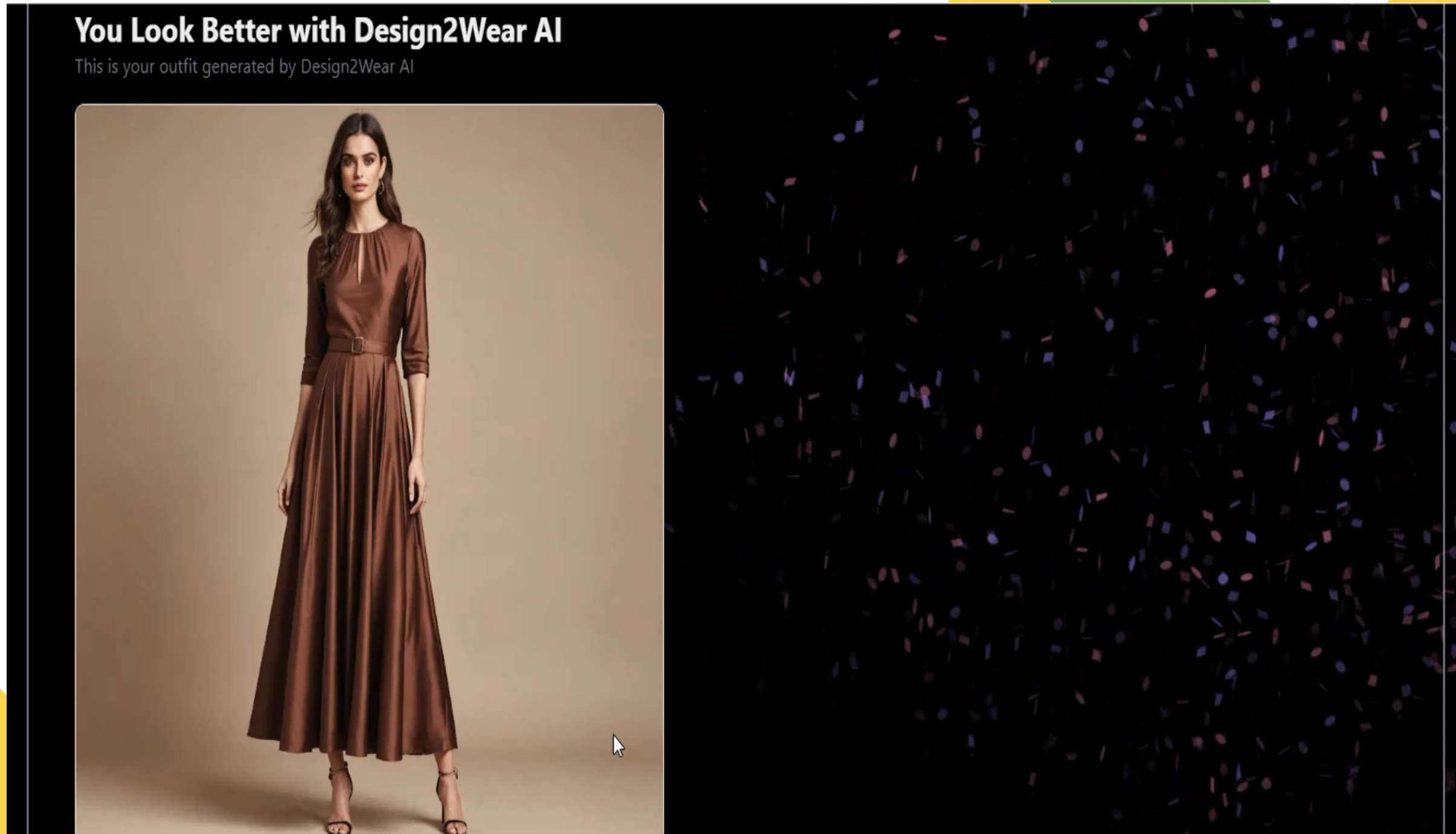
**Select your fabric preference**  
cotton silk polyester

**What is your outfit size?**  
xs s m l xl

GENERATE OUTFIT

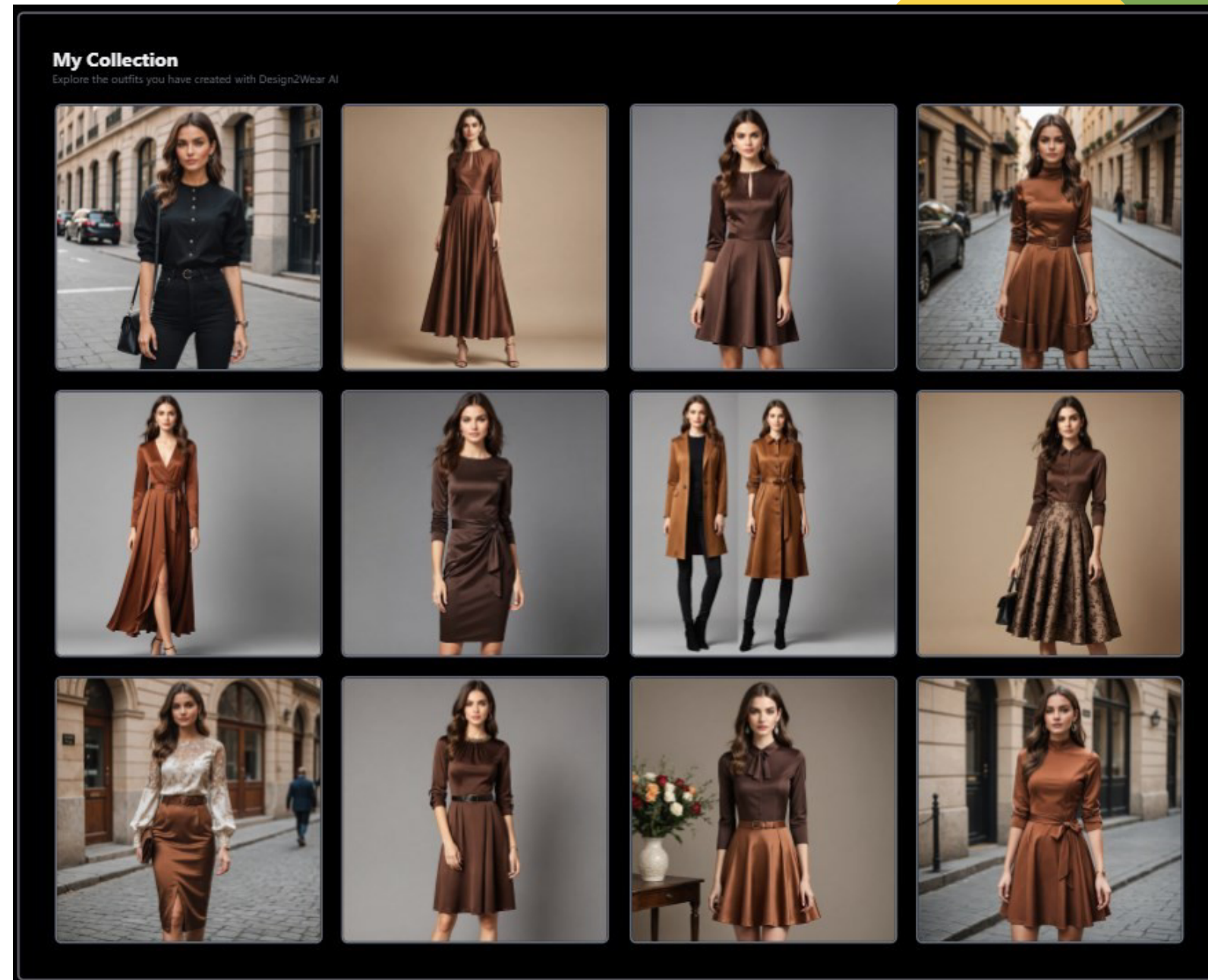
# PROJECT OUTCOMES:

## OUTPUT :





# COLLECTION OF OUTFITS:



# FUTURE SCOPE:

## ❖E-commerce Integration:

Plans for the future include allowing users to purchase designs directly on the platform.

## ❖AR/VR Capabilities:

Enhance virtual try-ons with VR and AR capabilities, making the design interaction even more immersive.



# CONCLUSION:

- ▶ **Design2Wear-AI** reimagines the future of fashion by blending the power of artificial intelligence with individual creativity. It offers a **personalized, user-friendly**, and **trend-aware** platform that empowers users to design outfits tailored to their style, body type, and preferences.
- ▶ By integrating cutting-edge technologies like **GANs, VAEs, and CNNs**, along with **real-time customization, recommendations, and virtual try-ons**, the platform not only simplifies fashion design but also makes it **accessible, sustainable, and engaging** for everyone.

*Design2Wear-AI is not just a tool — it's a step toward smarter, more sustainable, and inclusive fashion.*

# REFERENCES:

AI FOR FASHION (Author Dr. Csanák Óbudai Egyetem)[1]<https://www.researchgate.net/profile/Edit-Dr-Csanak>

A detailed review of artificial intelligence applied in the fashion and apparel industry

(Author -Chandadevi Giri1 et)[2]<https://ieeexplore.ieee.org/document/8763948>

Developing an AI-based automated fashion design system: reflecting the work process of

fashion designers (Author - Woojin Choi1 et)[3]<https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10223039>



**THANK YOU !**