Presentation on Project

DESIGN2WEAR-AI

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Academic Year 2024-25

Contents

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:

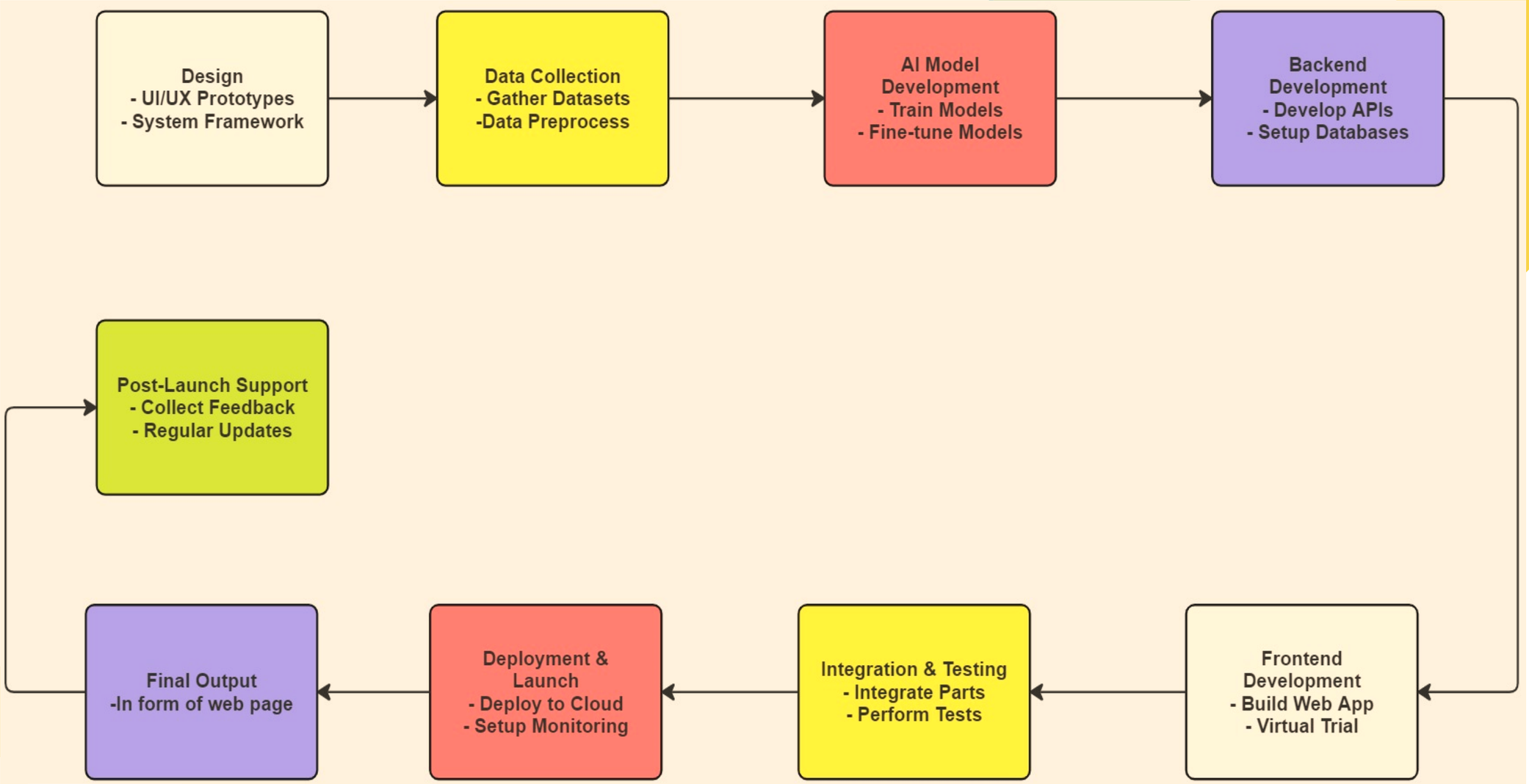
AI-Driven Outfit Design & Recommendation System

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

OBJECTIVES & SCOPE:

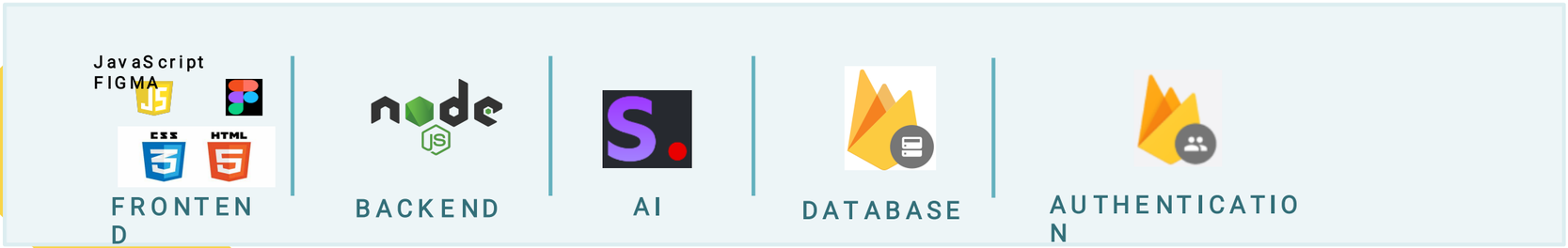
- **Design:** Create UI/UX prototypes and system architecture.
- **Data:** Gather and preprocess datasets.
- **AI:** Train and fine-tune models.
- **Backend:** Develop APIs and databases.
- **Frontend:** Build web app and virtual trial room.
- **Testing:** Conduct thorough testing.
- **Deployment:**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

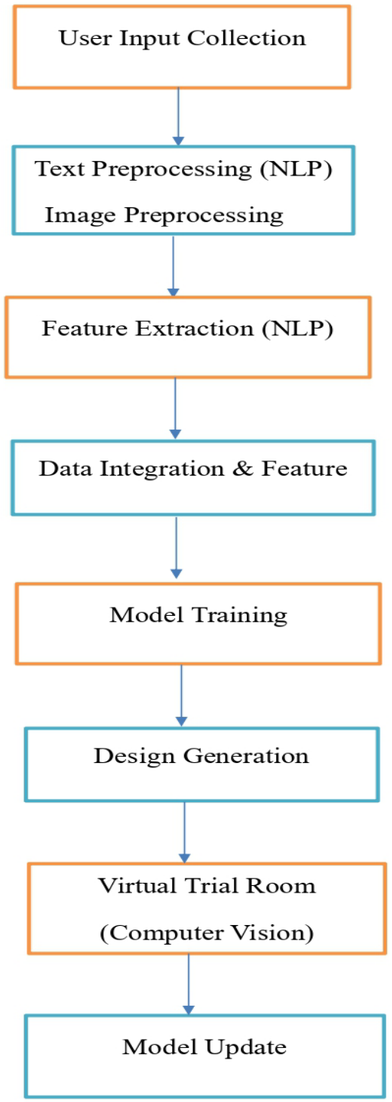
  Without targeted data, the AI might not fully reflect diverse fashion preferences across cultures or regions.

- **Continuous Model Maintenance**

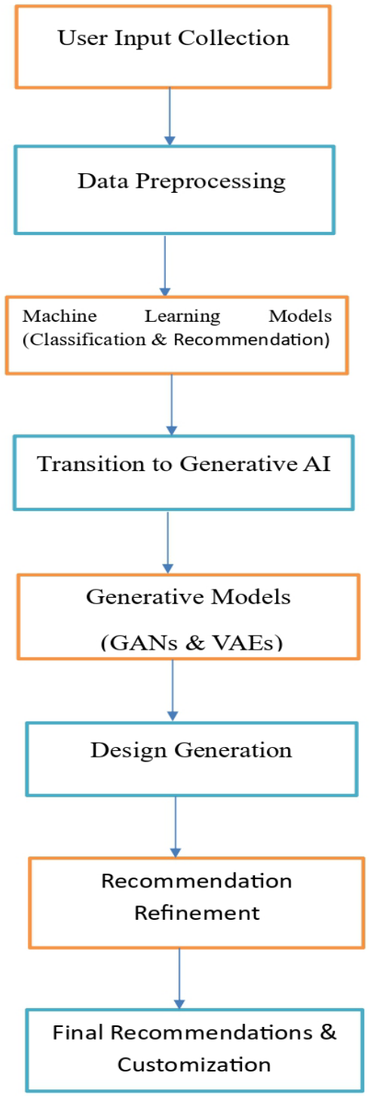
  AI models require regular updates to keep up with changing fashion trends and user preferences.

WORKFLOW DIAGRAM:

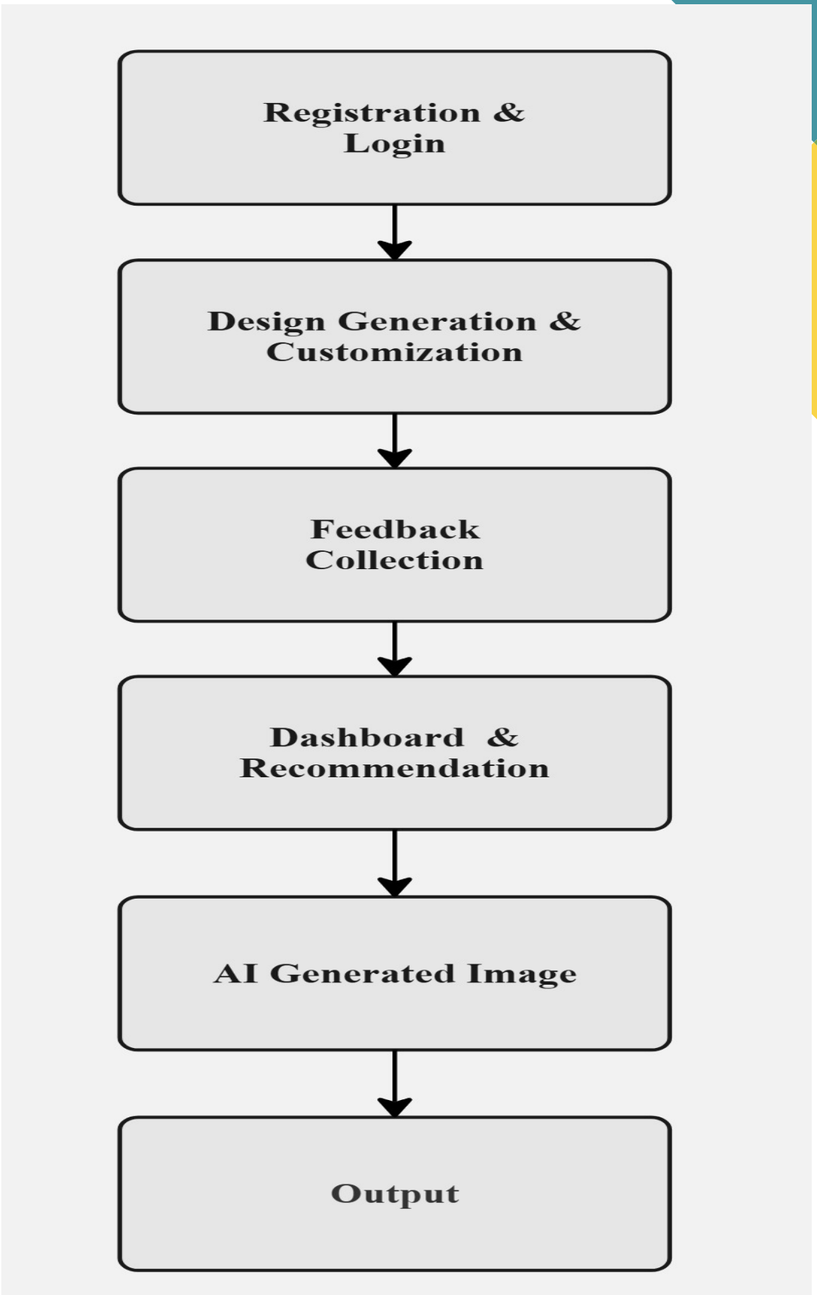
Internal Workflow: NLP to Machine Learning



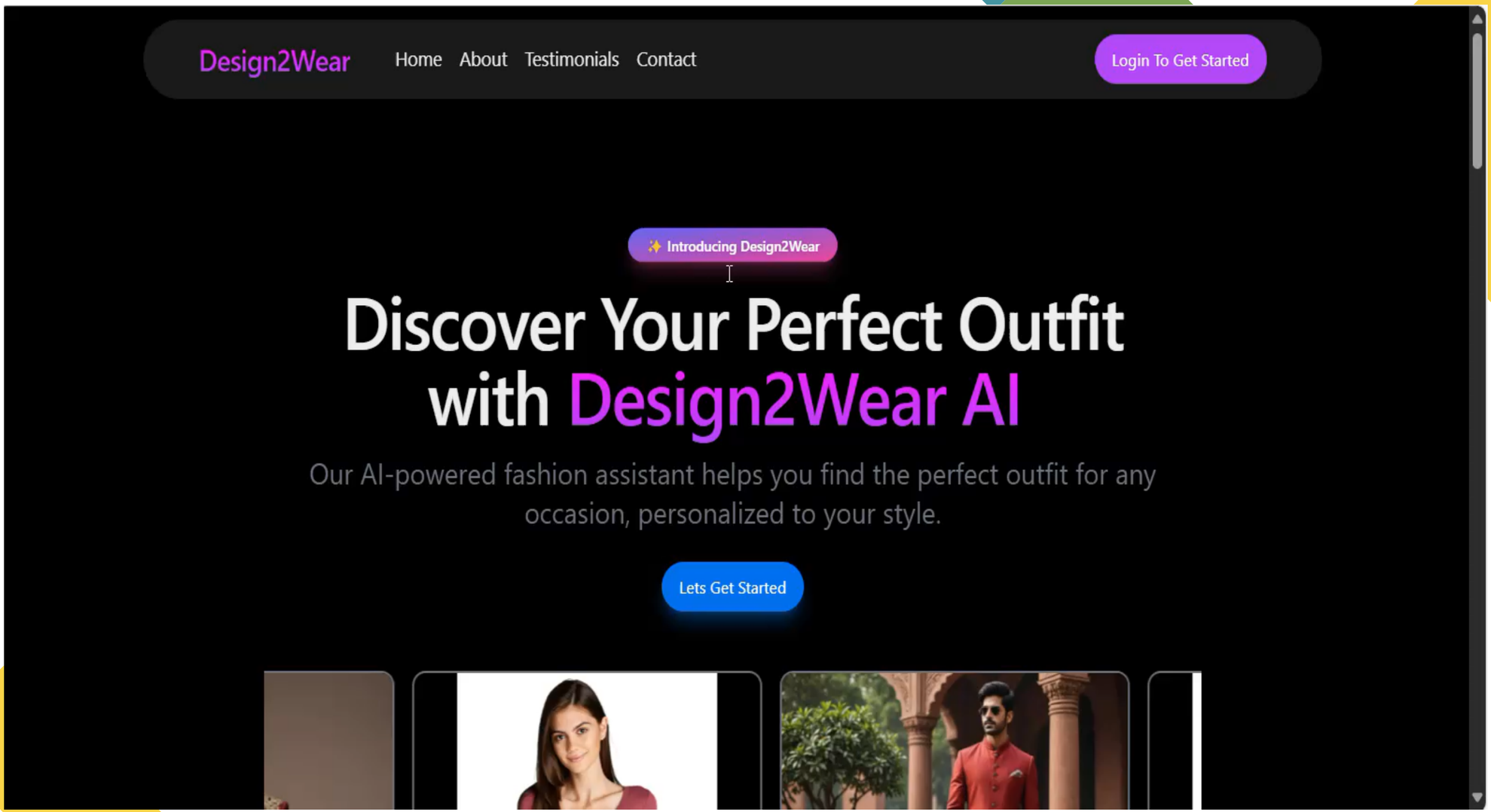
Internal Workflow: Machine Learning to Generative AI for Recommendations



BLOCK DIAGRAM:

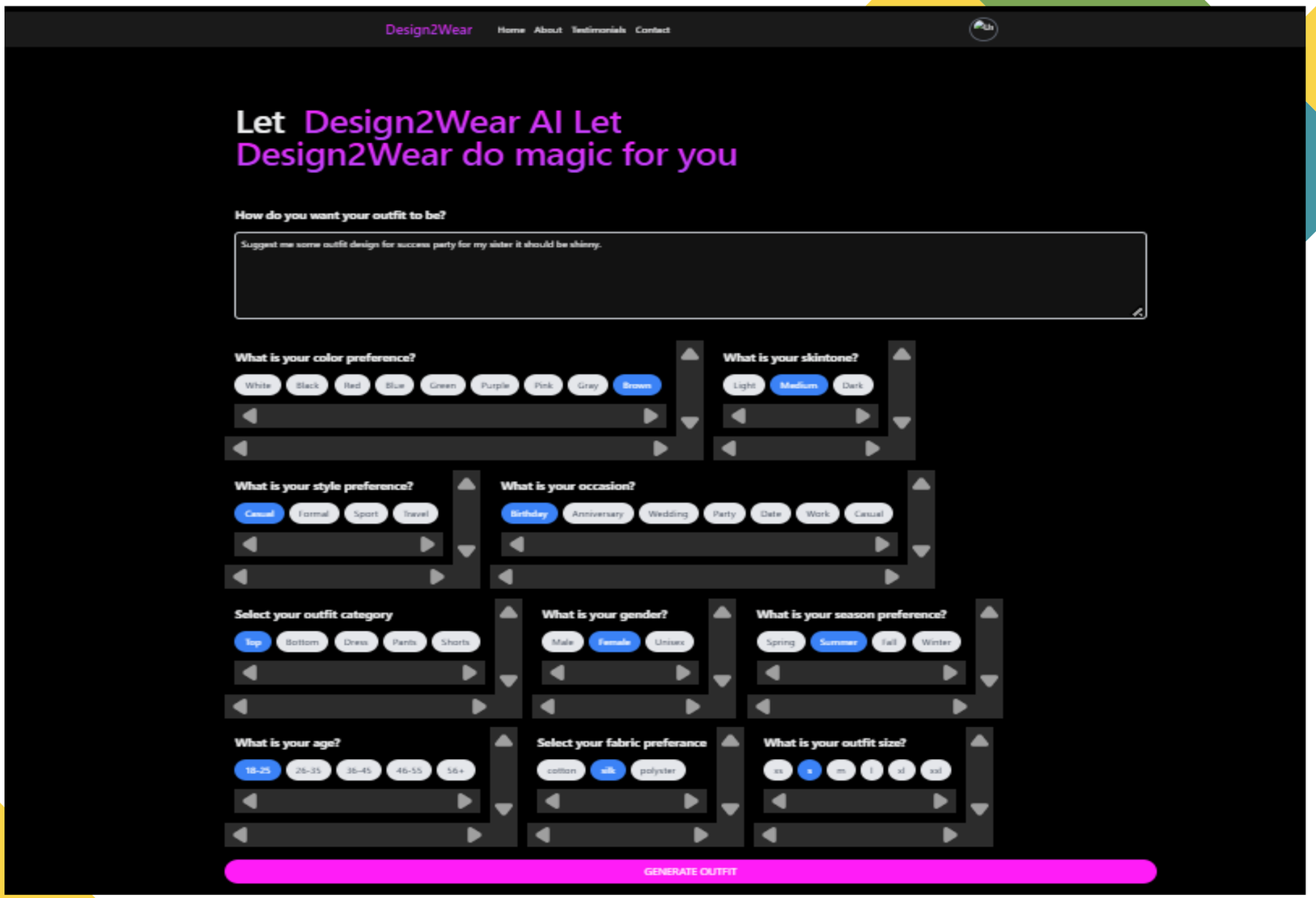


PROJECT OUTCOMES:



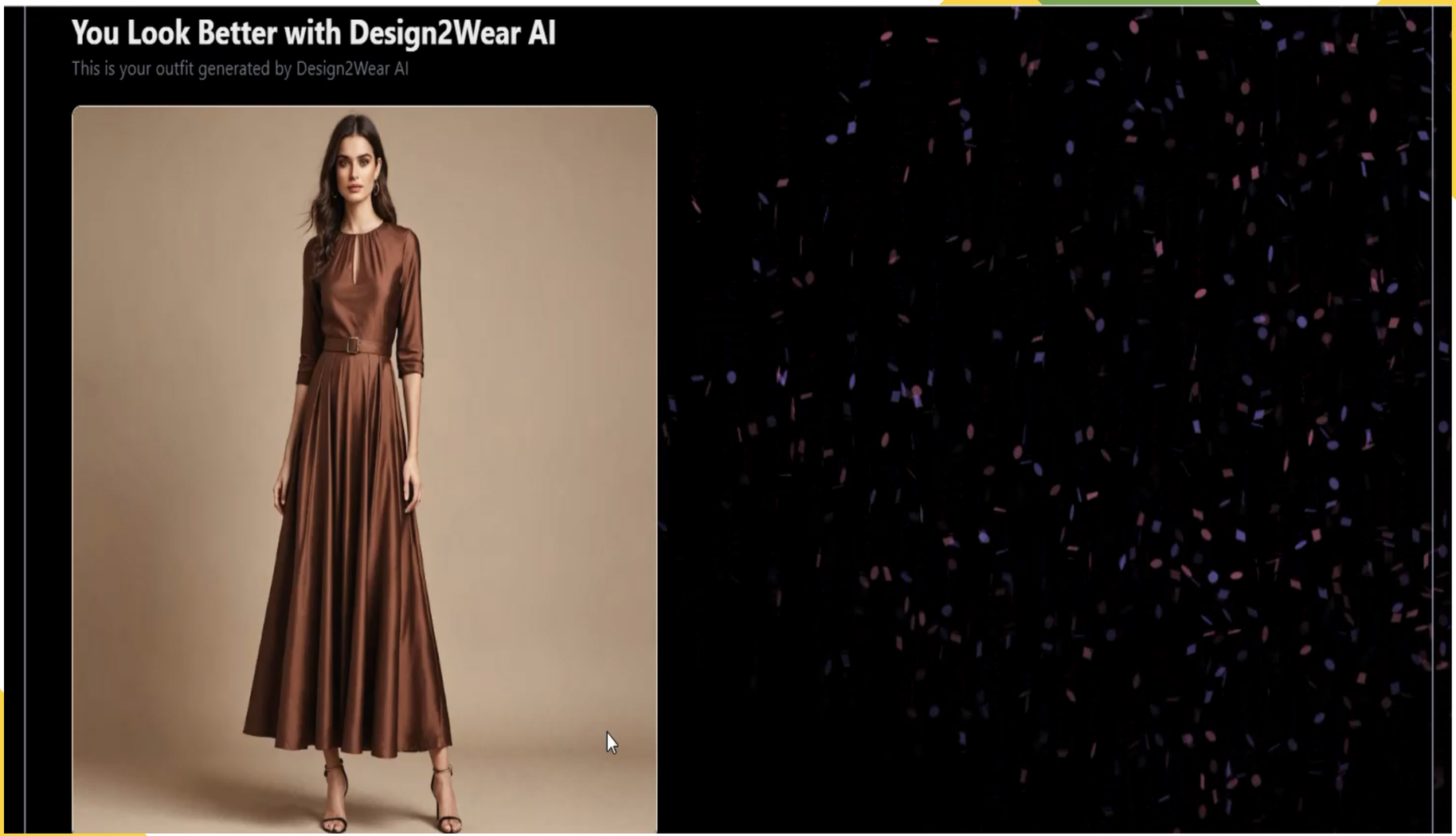
PROJECT OUTCOMES:

INPUT:

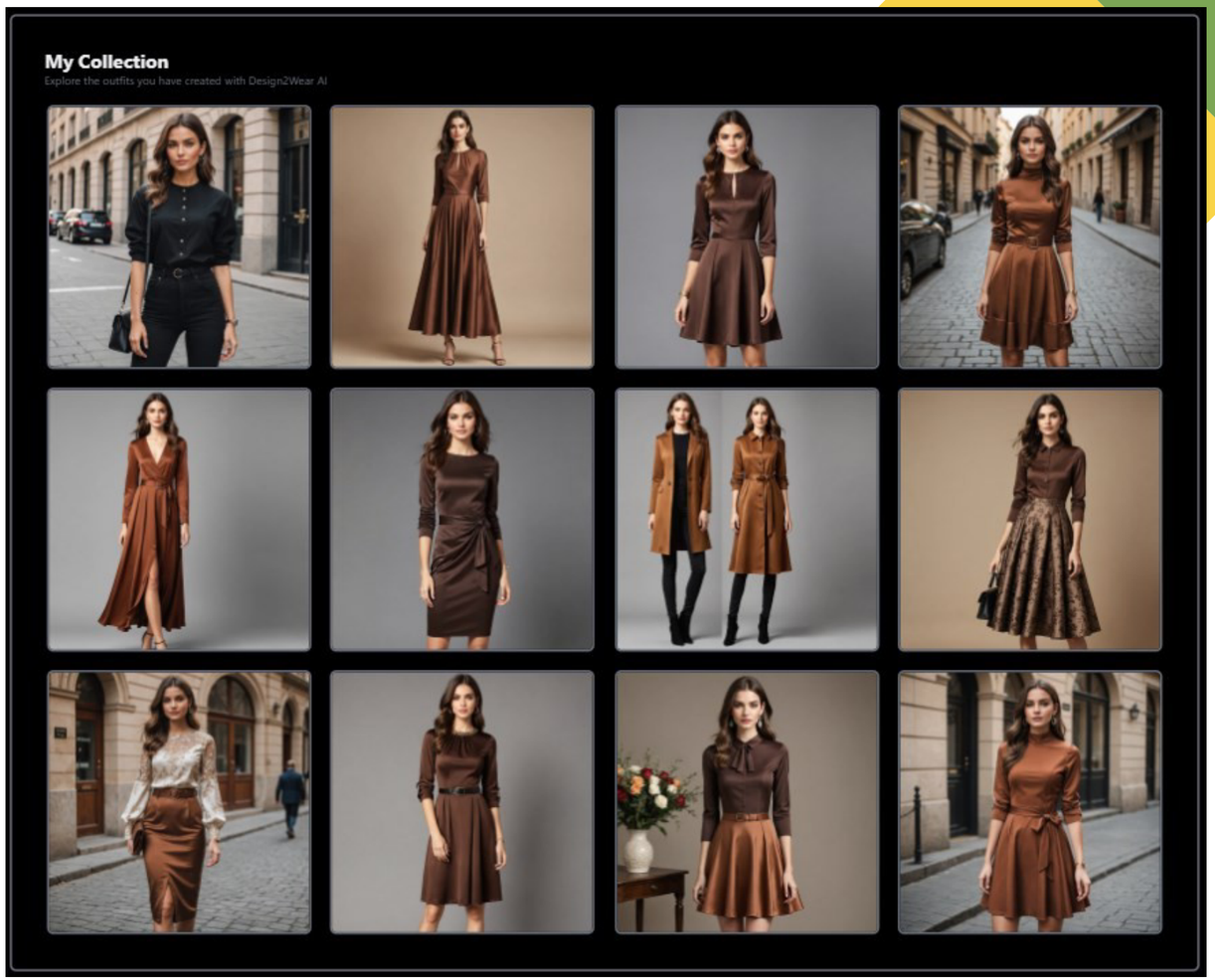


PROJECT OUTCOMES:

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 !