AI-Powered Fashion Revolution

The website will analyze user body shape, height, and complexion to provide personalized outfit recommendations. Users can virtually try on outfits in real-time and seamlessly purchase through affiliate shopping platforms. An admin dashboard will manage AI recommendations and user interactions.

Functional Requirements

User Features:

1 User Authentication

- Sign up/Login via Email/Password, Google/Facebook OAuth.
- Profile creation with body measurements & complexion details.
- Store saved outfit recommendations.

2 AI-Driven Recommendations

- AI analyzes body shape and complexion from user inputs.
- Suggests outfits that complement the user's body type and complexion.
- Users can browse recommended outfits.

3 Real-Time Virtual Try-On

- AI overlays selected outfits onto the user's image or 3D body model, using Pose Estimation & GANs for realistic outfit fitting.
- Supports multiple outfit trials simultaneously.

4 Seamless Shopping

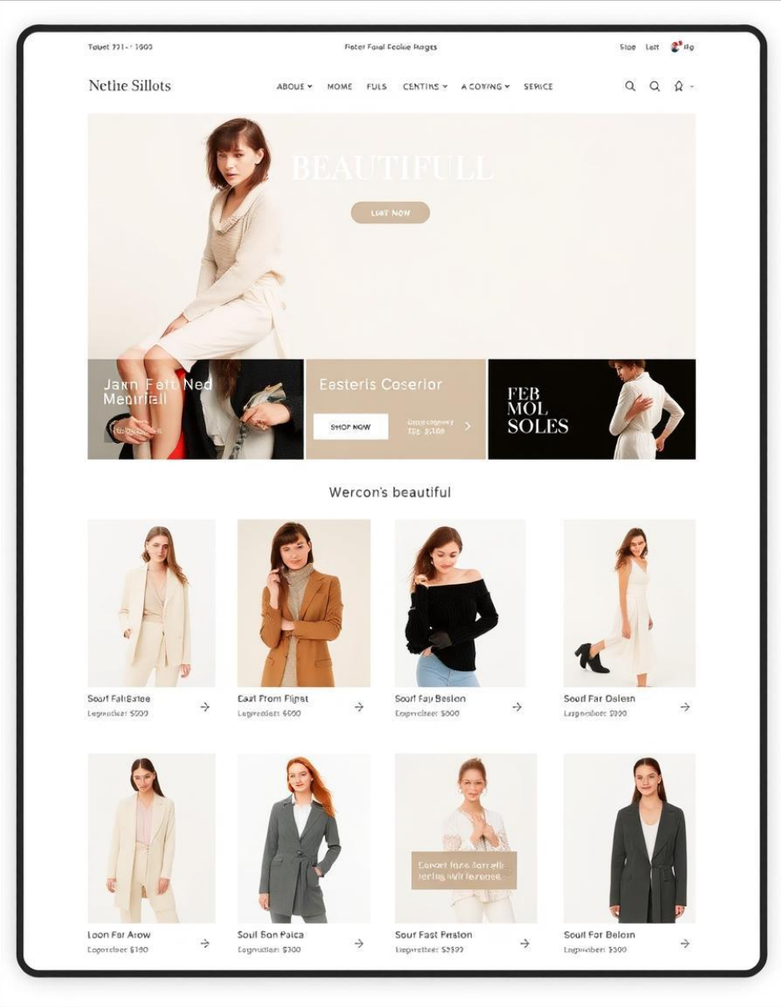
- Displays outfit recommendations with price & buy links.
- Integrates with Amazon, Myntra, and other platforms via API or Web Scraping.
- Tracks most clicked/bought outfits for analytics.

Admin Features

Manage AI recommendations

Monitor user activity

Manage affiliate links



UI/UX Features

Colorful, modern, and responsive UI.

Light & Dark mode options

Smooth navigation & fast performance

Non-Functional Requirements

1 Performance

- Fast AI processing for *real-time virtual try-on*.
- Efficient database queries to ensure *low latency*.

2 Security

- *Secure authentication*.
- *Secure API calls* to prevent unauthorized access.
- *Data encryption* for storing user information.

3 Scalability

- Cloud-based AI processing (AWS/GCP)
- Modular architecture for *future feature expansion*.

4 Usability

- Intuitive and easy-to-use *user interface*.
- Minimal learning curve for *new users*.

Technologies

Frontend

- React.js (Next.js) for a dynamic, SEO-friendly UI.
- Three.js/WebGL for 3D outfit rendering.
- Tailwind CSS/Material UI for a modern look.

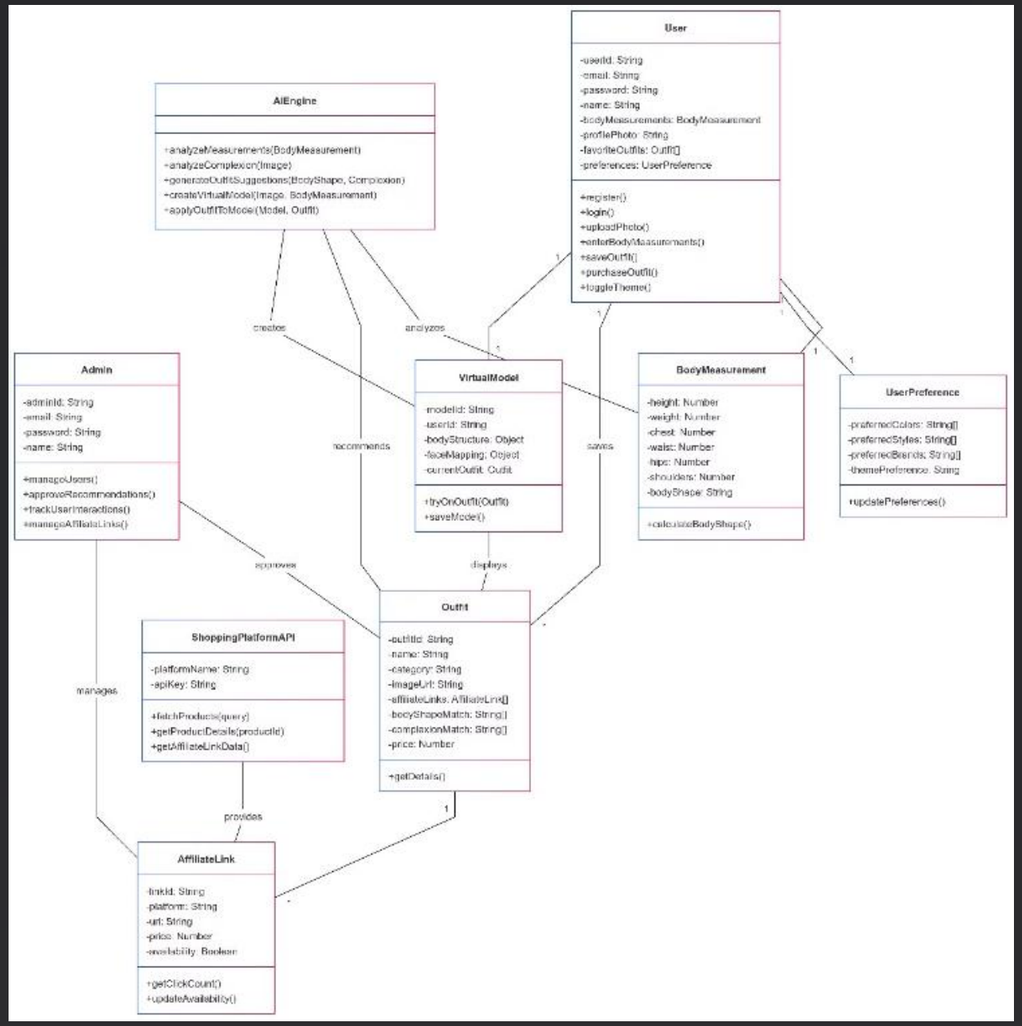
Backend

- Node.js with Express.js for API handling & authentication.
- MongoDB/Firebase for storing user data & preferences.

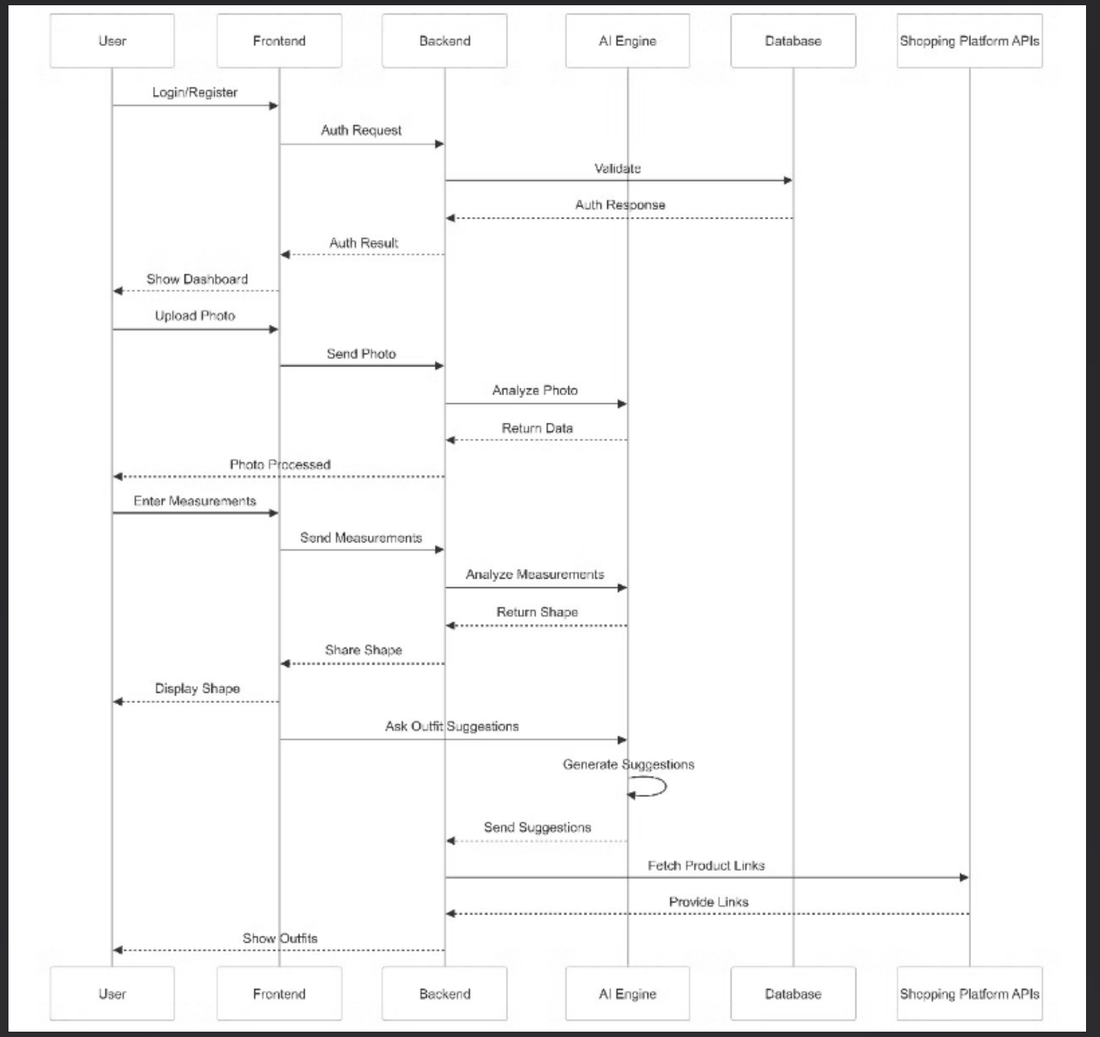
AI/ML

- Pose Estimation using OpenPose / MediaPipe.
- Outfit Transfer AI using StyleGAN / ClothFlow.
- 3D Model Creation using Blender API / TensorFlow 3D.
- Real-time AI Processing using WebRTC + TensorFlow Serving.

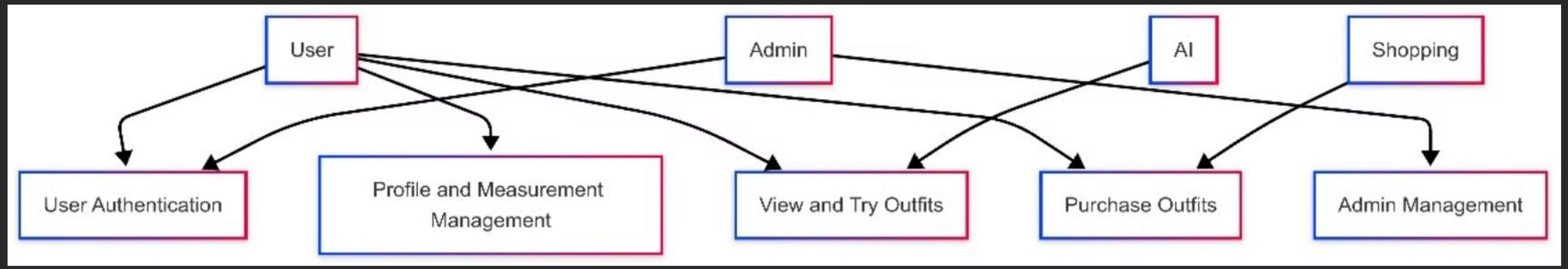
Class Diagram



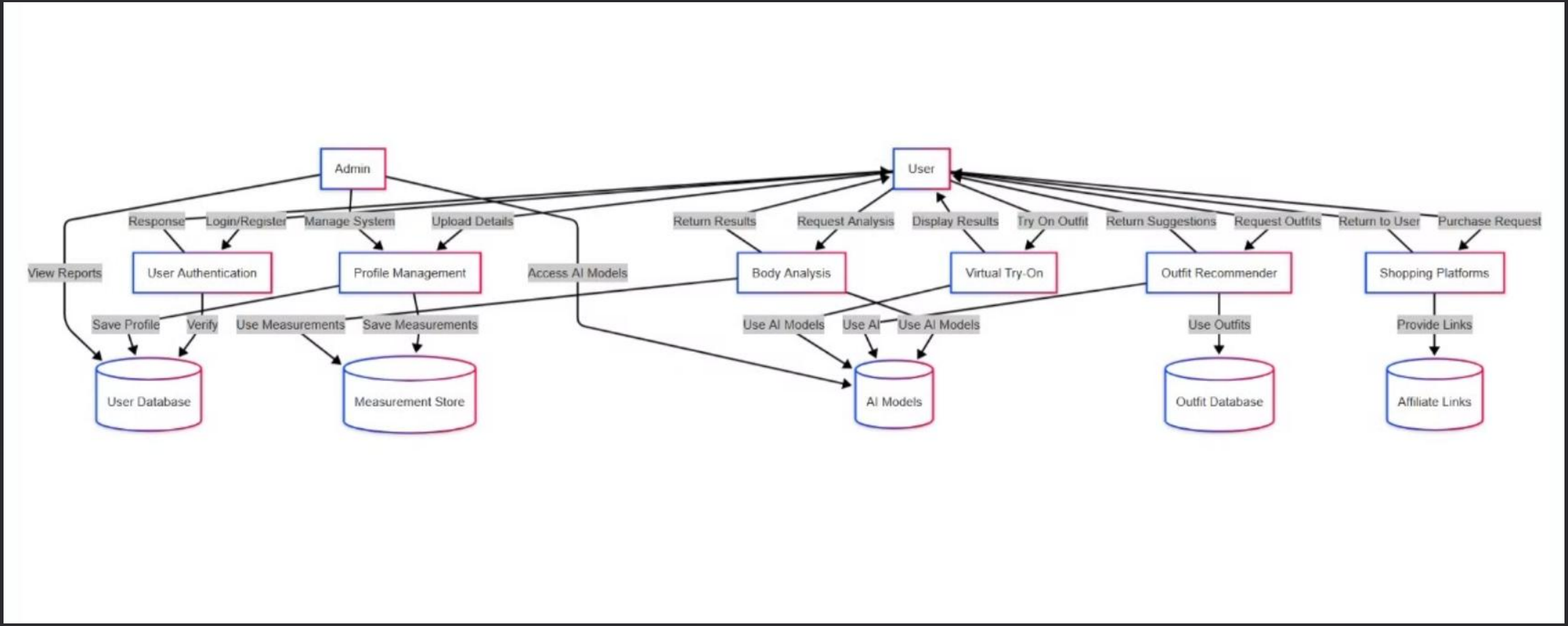
Sequence Diagram



Use Case Diagram



Data Flow Diagram



Development Roadmap: UI & AI

1

UI & Authentication

Design UI (Figma prototype). Develop user authentication (Firebase/Auth0). Set up user profile & body measurement input.

2

AI Model Integration

Train AI models for body shape detection & complexion analysis. Build the fashion recommendation system. Set up a backend API to handle AI requests.

3

Virtual Try-On & Shopping

Implement real-time virtual try-on (Pose Estimation + GANs). Integrate Amazon/Myntra API for shopping links.

4

Admin & Testing

Build an admin dashboard for managing recommendations. Test performance, security & scalability. Final UI/UX improvements & bug fixes.

Thank You

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