AUREL

THE FUTURE OF FASHION

WHAT IS IT?

- **Web scraping + cloth analytics for real-time trend, fabric, and style insights**
- **Diffusion models generating fashion designs from text or sketches**
- **Virtual try-on (VITON) enabling personalized, digital fitting**
- **Sustainable focus promoted through reduced waste and an industry-impact blog**

CLOTH BLEND AND VITON

FEATURES:

- Pattern-to-Cloth blending
- AI-powered body tracking (shoulders, nose)
- Real-time virtual try-on via webcam
- Rotation-aware shirt placement
- Sizing stabilization for smooth AR

FRAMEWORK/LIBRARIES:

- mediapipe – For AI-based real-time pose estimation
- opencv-python (cv2) – For image processing, webcam handling, and blending
- numpy – For array operations and image data manipulation
- Pillow (PIL) – For loading and converting uploaded images
- collections.deque – For stabilizing shoulder width across frames in real-time tracking

SKETCH TO IMAGE

FEATURES:

- Canny Edge Detection for preprocessing the input image
- ControlNet Integration for conditioning generation based on edge maps
- Text-to-Image Generation using Stable Diffusion XL
- Custom Prompts to guide the design output (e.g., “floral design sneaker”)
- Visualization with Matplotlib for comparison (Original, Edges, Generated)

FRAMEWORK/LIBRARIES:

- Diffusers – Stable Diffusion & ControlNet pipelines
- transformers – Tokenizers & language models
- torch (PyTorch) – Deep learning backend
- OpenCV (cv2) – Image processing & Canny edge detection

FASHION METRICS

FEATURES:

- Trend Forecasting - Predict future fashion trends based on historical data analysis.
- Gather and analyze fashion-related keywords from Google Trends.
- Time Series Forecasting - Use forecasting models like Prophet for accurate trend predictions.
- Trend Visualization- Display trend forecasts on an interactive, dynamic dashboard.
- Scalable Insights -Generate insights for an expanding list of fashion items and trends.

FRAMEWORK/LIBRARIES:

- Pytrends: For scraping Google Trends data
- Pandas: For data manipulation and preparation.
- NumPy: For numerical operations (used along with pandas).
- Prophet (by Facebook): A library for time series forecasting

SUSTAINABLE BLOGS

IMPACT

- Reduced Waste
- Lower Carbon Footprint
- Water Conservation
- Reduced Pollution
- Resource Conservation
- Higher Quality/Durability

FEATURE	FEASIBILITY	INNOVATION	SCALABILITY
FASHION METRICS -> REDUCING OVERPRODUCTION	RELATIVELY FEASIBLE WITH EXISTING DATA ANALYSIS AND TREND FORECASTING AI.	OUR FASHION METRIC HELP US ANALYZE TRENDS, MORE ACCURATE PRODUCTION AND LESS UNSOLD INVENTORY ENDING IN LANDFILLS.	HIGHLY SCALABLE AS DATA COLLECTION AND ANALYSIS CAN BE APPLIED ACROSS THE INDUSTRY.
CLOTH BLEND & VIRTUAL TRY-ON (VITON) -> MINIMIZING PHYSICAL PROTOTYPING	VITON TECHNOLOGY IS DEVELOPING AND BECOMING MORE FEASIBLE FOR WIDESPREAD USE.	CLOTH BLEND AND VITON ELIMINATES THE NEED FOR NUMEROUS PHYSICAL SAMPLES, SAVING MATERIALS AND REDUCING WASTE.	SCALABLE AS BOTH THE TECHNOLOGY IMPROVES AND INTEGRATES INTO DESIGN WORKFLOWS.
FASHION METRICS -> OPTIMIZING RESOURCE USE	FEASIBLE WITH DETAILED DATA COLLECTION ACROSS THE SUPPLY CHAIN AND AI ANALYSIS.	UNDERSTANDING REAL-TIME DATA CAN INFORM MORE EFFICIENT MATERIAL SOURCING AND PRODUCTION PROCESSES.	SCALABLE WITH THE ADOPTION OF DATA TRACKING AND AI TOOLS BY MANUFACTURERS AND SUPPLIERS.
SKETCH TO IMAGE -> ENABLING ON-DEMAND DESIGN	TECHNICALLY FEASIBLE WITH CURRENT AI IMAGE GENERATION MODELS. REQUIRES USER-FRIENDLY INTERFACES.	SKETCH-TO-IMAGE AND AI-GENERATED DESIGNS CAN FACILITATE MORE AGILE, NEEDS-BASED PRODUCTION RATHER THAN TRIAL AND ERROR.	SCALABLE DEPENDING ON THE EASE OF USER ADOPTION AND INTEGRATION INTO MANUFACTURING PROCESSES.

THANK YOU