**Kammavari Sangham (R) 1952**

**K. S. Institute of Technology**

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**DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING**

**PROJECT EXPO 2024-25**

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| **Team No.:** B1 | |
| **Project Title:** Closet Care Buddy | |
| **Project Team Members with USN:** | **Guide Name & Designation:** |
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| **ABSTRACT** | |
| Closet Care Buddy is an AI- and IoT-powered smart wardrobe system that promotes sustainable fashion by helping users digitally organize clothes, receive garment care tips, and get weather-based outfit suggestions. It encourages mindful consumption by extending clothing lifespan and minimizing textile waste. Designed for busy professionals, eco-conscious users, and fashion lovers, the platform blends convenience with sustainability, transforming everyday wardrobe management into a personalized, environmentally friendly experience that supports a greener lifestyle. | |
| **METHODOLOGY** | |
| C:\Users\admin\OneDrive\Desktop\cllg\7th sem\iot\data flow.png*Closet Care Buddy* is an AI and IoT-powered smart wardrobe system that helps users catalog clothes, manage garment care, and receive outfit suggestions. It uses image recognition or manual input for wardrobe entry and provides personalized care tips based on fabric, usage, and climate. LangChain and GPT-4o generate detailed clothing descriptions, while DALL·E 3 creates full-body outfit images. A user-friendly app interface offers care reminders, outfit ideas, and sustainability tracking. | |
| **IMPLEMENTATION** | |
| The system first performs **image captioning** by using LangChain integrated with GPT-4o to analyse and describe the clothing in an input image. This contextual information is stored and retrieved using a **vector database**, enabling efficient similarity matching. The final caption is then generated using a **Retrieval-Augmented Generation (RAG)** approach, and any temporary data is cleaned up after processing.Next, for **outfit generation**, the generated caption is converted into a structured prompt. This prompt is passed to **DALL·E 3**, which creates a full outfit image. Finally, the system returns the generated outfit image URL. | |
| **RESULTS** | |
| A computer screen shot of a computer  Description automatically generated A screenshot of a computer  Description automatically generated A person sitting on the floor  Description automatically generated | |
| **APPLICATION** | |
| 1. **Smart Wardrobe & Styling** – AI-driven outfit suggestions based on user preferences, weather, and events. 2. **Sustainability Focus** – Encourages eco-friendly fashion through garment care, recycling, and reduced waste. 3. **Community & Future Integration** – Enables style sharing, event planning, and plans for collaboration with sustainable brands. | |
| **CONCLUSION & FUTURE SCOPE** | |
| **Conclusion:** Closet Care Buddy leverages AI to simplify wardrobe management, offering outfit recommendations and garment care to promote sustainable fashion choices.  **Future-Scope:** Future features could include AR try-ons, eco-friendly shopping options, and expanded community engagement to support circular fashion. | |