

induō: AI-Powered Wardrobe Assistant

Problem Statement

Many individuals face daily challenges in efficiently managing their wardrobes and creating satisfying outfits. Common issues include:

- Time-consuming outfit selection process
- Difficulty in visualizing potential combinations
- Chaotic wardrobe searches resulting in messy piles of rejected outfits
- Feeling of "having nothing to wear" despite a full closet
- Unnecessary clothing purchases due to poor wardrobe visibility

Our Solution: induō

induō is an intuitive, AI-powered mobile application designed to address common wardrobe management pain points. By combining digital organization with personalized styling recommendations, induō aims to transform the way people interact with their clothes, promoting efficiency, creativity, and sustainability in personal fashion.

Key Features

1. **Digital Wardrobe:**
 - Easily upload and categorize clothing items
 - Quick access to your entire wardrobe from your iphone
2. **AI Outfit Generator:**
 - Select a clothing item to style
 - Swipe through AI-generated outfit combinations using your existing wardrobe
 - Outfits displayed on a personalized AI-generated avatar in desired environment
3. **Personalized Recommendations:**
 - Machine learning algorithm adapts to user preferences over time
 - Improved outfit suggestions based on liked and disliked combinations
 - Content-based filtering recommender system
4. **Sustainability Focus:**
 - Encourages users to make the most of their existing wardrobe
 - Reduces impulse purchases by showcasing new combinations of owned items

Benefits

- **Time Efficiency:** Streamline the outfit selection process

- **Improved Organization:** Better visibility and management of your wardrobe
- **Personalization:** Tailored outfit suggestions that improve over time
- **Cost Savings:** Reduce unnecessary clothing purchases
- **Sustainability:** Promote more sustainable fashion consumption habits

Target Audience

induō caters to a diverse user base, including but not limited to:

- Busy professionals
- Students
- Parents (themselves/kids)
- Fashion enthusiasts
- **Anyone** looking to optimize their wardrobe management

Software Development

induō will be developed as an iOS mobile application, leveraging a mix of cutting-edge technologies including established open-source tools and APIs to ensure robust functionality and scalability.

- **Frontend Framework:** Swift
 - Enables iOS development
 - Provides a responsive user interface
- **Backend and Database:** Firebase
 - Offers real-time database capabilities
 - Provides authentication and cloud storage solutions
- **Large Language Model:** Claude.ai
 - Powers natural language processing and intelligent outfit recommendations
- **AI Image Generation:**
 - Based on Stable Diffusion, Midjourney, Flux, etc.
 - Creates AI-generated outfit visualizations

Justification

induō is an ideal senior project that challenges us technically, allows for the application and extension of our skills, fits within the semester time frame, and generates enthusiasm among team members and potential users alike:

- **Application of Learning:** Integrates knowledge from previous internship experience and LMU software development courses (mobile/web app development, artificial intelligence, cognitive systems, databases, networks, and interactive design).

- **Skill Extension:** induō is a passion project that resonates with our entire team, showcasing the practical application of our technical skills in solving a relatable, everyday problem. This will extend our knowledge in cutting-edge areas of high interest such as Artificial Intelligence, Prompt Engineering, Machine Learning, Data Science, Multimodal Learning, and Image Generation.
- **Technical Difficulty:** induō's full-stack complexity challenges us with advanced concepts while remaining achievable. By leveraging existing open-source tools and APIs, we can focus on integration and unique feature development, making the project scope manageable within the given time constraints.