

AI Technology Overview

1. Platform Concept

ANKKA is an AI-native platform designed to support footwear product development through structured generative workflows.

The system combines generative AI models with industry-specific design logic and a database of real footwear components to accelerate the concept creation process.

Traditional footwear design requires weeks or months of development cycles, including concept exploration, sketching, prototyping, and internal review.

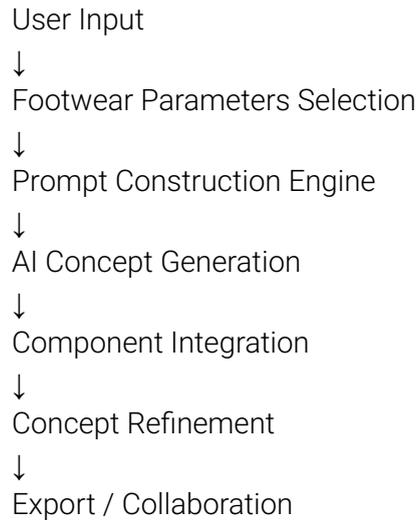
ANKKA significantly reduces this process by enabling manufacturers and brands to generate and evaluate product concepts within minutes.

The platform is designed as a B2B SaaS solution for footwear brands, manufacturers, and product teams.

2. System Architecture

The ANKKA platform follows a modular architecture that connects user input, generative AI models, and structured product design workflows.

The system architecture can be represented as the following pipeline:



Users define product parameters such as category, price segment, market positioning, and design direction.

These parameters are converted into structured prompts used to guide the AI generation process.

The platform then produces multiple product concepts that can be reviewed and refined by designers and product teams.

3. AI Model Stack

ANKKA uses a combination of generative AI models and specialized control systems to produce structured footwear concepts.

Layer	Technology
Workflow orchestration	ComfyUI
Base generative model	Stable Diffusion XL
Structural guidance	ControlNet
Fine-tuning	LoRA models
Image refinement	Inpainting
Infrastructure	GPU cloud inference

The system is designed as a modular architecture, allowing new models and datasets to be integrated as the platform evolves.

This approach enables continuous improvement of the generation quality and adaptation to different footwear categories.

4. Generation Workflow

The generation process is orchestrated through a node-based workflow system.

The typical generation pipeline follows these steps:

User parameters



Structured prompt construction



ControlNet conditioning



SDXL generation



LoRA style adaptation



Concept variations



Final concept output

The workflow architecture allows the platform to produce multiple variations of a concept based on different product parameters.

This enables rapid exploration of product directions before committing to physical prototyping.

5. Current Prototype Status

ANKKA has already developed a working AI concept generation prototype.

The current prototype includes:

- operational AI generation pipeline
- validated model stack based on SDXL
- node-based workflow orchestration
- repeatable generation process
- prototype demonstrations delivered to industry partners

The prototype has been demonstrated to footwear manufacturers and suppliers during industry meetings and product discussions.

These demonstrations confirmed strong interest from the industry in AI-assisted product development.

6. Productization Roadmap

The next stage of development focuses on transforming the working prototype into a scalable SaaS platform.

Key development priorities include:

Web Platform Interface

Development of a web interface allowing brands and manufacturers to interact with the AI system.

Component Database

Creation of a structured library of footwear components used during concept generation.

Backend Infrastructure

Implementation of user accounts, project storage, and platform management systems.

Workflow Automation

Automation of prompt construction and generation pipelines.

Collaboration Tools

Development of tools for sharing concepts between product teams and manufacturers.

7. Strategic Advantage

Most generative AI tools available today are general-purpose image generation systems.

They lack the structured workflows required for real product development.

ANKKA is designed specifically for the footwear industry and combines:

- structured product design workflows
- generative AI models
- industry-specific design logic
- integration with real manufacturing processes

By combining AI with structured product development logic, ANKKA enables brands and manufacturers to generate, evaluate, and refine product concepts significantly faster than traditional design processes.