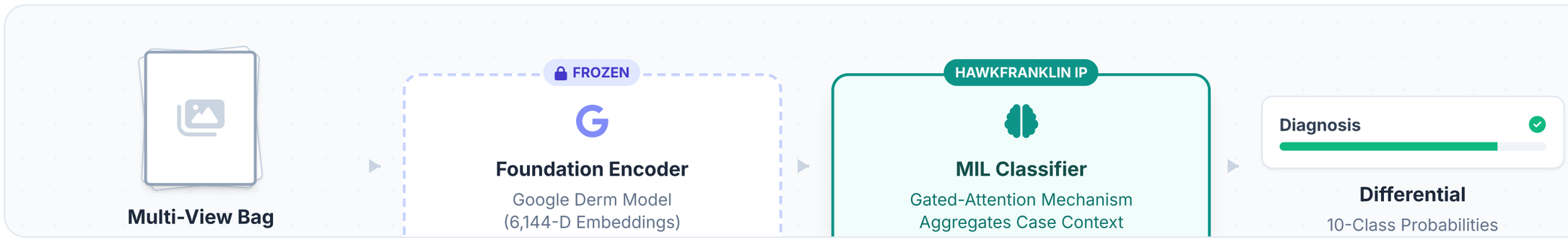
The Engine

Architecture & Methodology

HawkFranklin Research

04 | SOLUTION ARCHITECTURE

Multiple Instance Learning | Frozen Embeddings



Why Multiple Instance Learning?

Standard AI analyzes single images in isolation, missing the full picture. **PelliScope** mimics a dermatologist by aggregating evidence from multiple views (close-up details + body context) before making a decision.

TRAINING & VALIDATION RESOURCES

Curated Proprietary Dataset

Multi-view patient cases with rigorous 60/20/20 split to prevent data leakage.

Privacy-First Architecture

Original patient images are processed once. Only mathematical embeddings (non-reconstructible) are stored.

Benchmark Performance

Zero-shot comparison (Micro ROC-AUC)

0.86

Top Tier

Inference Speed: ~6 sec / case on Standard CPU