



REVIEW SESSION - 2

- **Track** - Digital Security
- **Project name** - Marine
- **Team Name** - Nonchalant

MARINE – AI-Powered Piracy Detection System

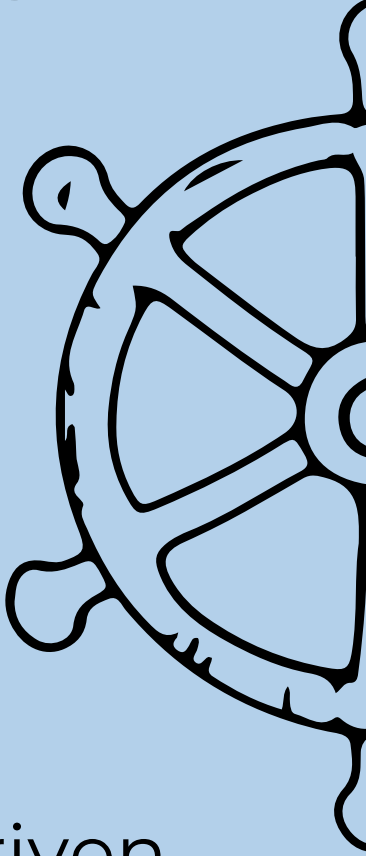
What is MARINE?

MARINE , an AI-powered system that analyzes video content to extract meaningful context and automate piracy detection. It intelligently formulates search queries using **advanced dorking techniques** to identify potential piracy sources.

Key Features:

- **Intelligent Content Discovery** → Extracts metadata for precise search optimization.
- **Automated Targeted Dorking** → Uses AI-driven queries to uncover piracy-related platforms.
- **Adaptive & Scalable** → Customizable for various industries with ethical detection mechanisms.

By combining AI-driven discovery with **smart dorking**, MARINE enhances piracy detection with accuracy and efficiency.

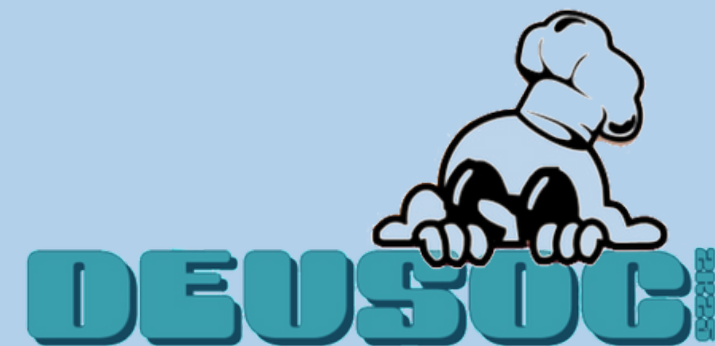


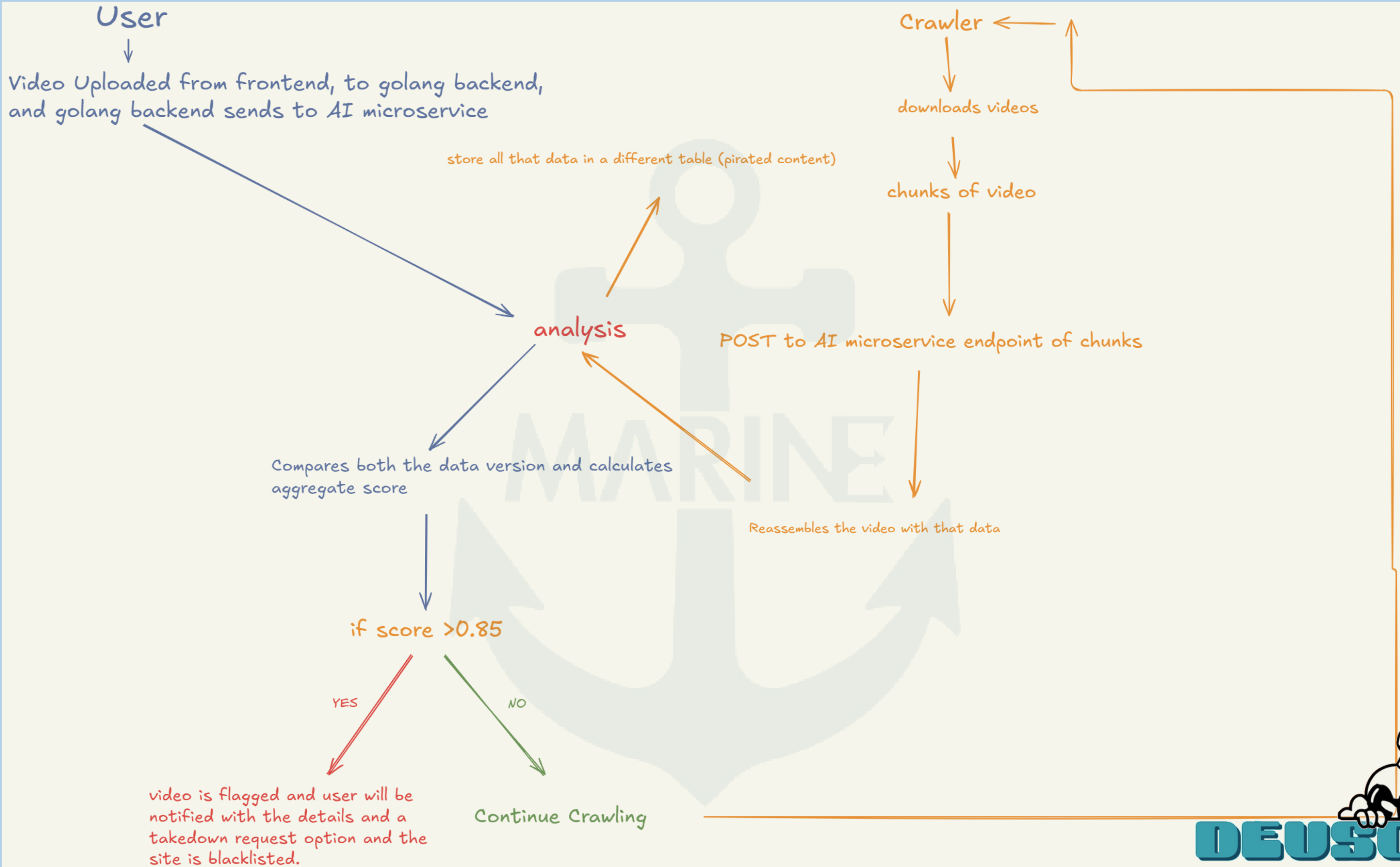
Technologies Used

- **Programming Languages** → **Python** (microservices), **Go** (backend), **JavaScript** (dashboard interface)
- **Frameworks & Libraries** → **FastAPI** (API handling), **OpenCV** (video processing)
- **AI & Search Techniques** → Vision models for intelligent content discovery, Automated Google **Dorking** for targeted searches

Infrastructure & Scalability → **Kafka** (real-time data broker), **Docker** (containerization), **Azure VM** (cloud deployment)

Database → **PostgreSQL** for storing analyzed metadata and detection logs





Feasibility & Viability

Feasibility:

- Technical Viability: Uses video fingerprinting, AI algorithms, and web crawlers to detect piracy.
- Scalability: Built to handle large datasets and support cloud-based scaling.

Challenges & Risks:

1. Data Processing Bottlenecks:

- Solution: Kafka handles high-throughput real-time data streams, ensuring scalable and efficient video content processing.

2. Environment Inconsistency:

- Solution: Docker provides isolated environments for AI models, ensuring consistent and reliable deployments across all stages.

Industry Alternatives:

- YouTube ContentID and Audible Magic: Focus on audio/video detection.
 - Limitations: Limited to certain platforms, doesn't detect across the web.

Competitive Advantage:

- Comprehensive Detection: Combines **fingerprinting**, **AI**, and **dorking** for robust piracy detection.
- Cross-Platform Reach: Tracks piracy across multiple websites, unlike competitors.



IMPACT AND BENEFITS

MARINE combats the global piracy problem, where 27% of online video content is pirated, leading to significant revenue loss for content creators and the entertainment industry.

Potential Impact:

- Content Creators: Safeguards intellectual property, potentially recovering billions lost annually due to piracy.
- Industry: Protects the \$80 billion global digital media industry from piracy-related losses.

Benefits of the Solution:

- Social: Promotes legal content consumption, encouraging a fairer digital ecosystem.
- Economic: Helps prevent up to 20% of revenue loss in media & entertainment due to piracy.
- Environmental: Optimizes digital resources by curbing the distribution of pirated content.

