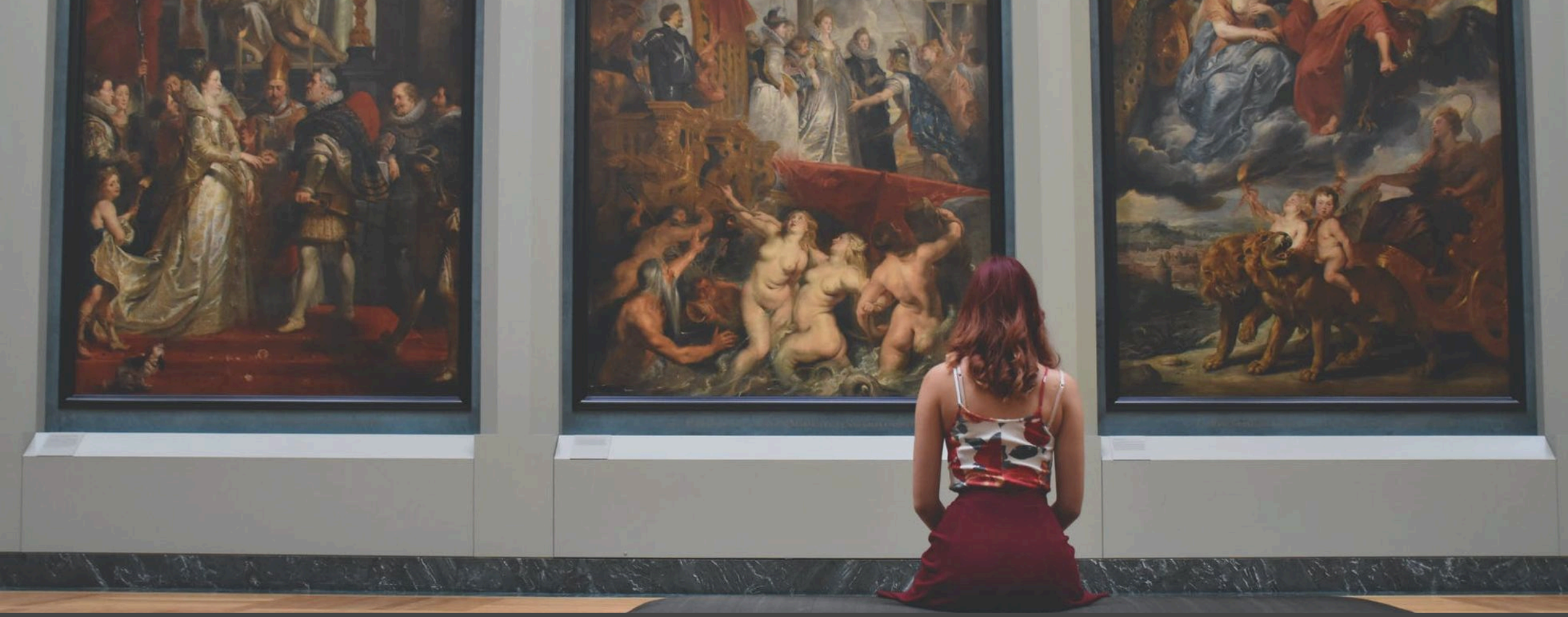

Museum Audio Guide

An AI-powered application that makes art accessible for visual impairments.

Fee Pieper

DEMO

Flow & System Architecture

Photo Upload & Preprocessing

- Image validation
- Image optimisation
- Digital fingerprint (hash generation)

Recognition & Analysis

- Smart search strategy (multi-tier recognition strategy)
- AI-powered image analysis
- Vector database management

Text-to-Speech Conversion

- Converting text to audio
- Using AI to generate natural-sounding speech

Performance Optimisation

1 Multi-Tier Recognition Strategy

- **TIER 1:** Perceptual Hash Cashing
- **TIER 1.5:** Pre-check
- **TIER 2:** Vector Search
- **TIER 3:** Vision API Fallback

2 Parallel API calls

- **Vision API:**
  - Metadata and description requested in parallel
  - Not one after another
- **TTS API:**
  - Both audio files generated simultaneously
  - Using ThreadPoolExecutor

Q+A PART

Thanks for your attention!

Happy to answer your questions now.

QR to my LinkedIn --> --> -->