Heritage Rhythm

SAFEGUARDING HERITAGE, STRENGTHENING MINDS.

Sparsh Bohra
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Together, we can bridge the gap in technology access and opportunity.

Ingoude
Company

🧠 Cultural Memory Loss & Mental Health Decline

- Dementia cases rising globally ↠ 153M by 2050 (WHO, 2023)
- Cultural identity loss ↠ depression & faster cognitive decline (NIA, 2023)
- Dance, music, movement ↠ memory recall & improved social connection

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Rhythm Heritage as a Mental Health & Safety Tool

- ✅ Cultural Dance as Memory Therapy ⇝ Retain deep-seated memories
- ✅ Prevent Cultural Amnesia ⇝ AI preserves fading traditions
- ✅ Intergenerational Engagement ⇝ Elders + youth bridging loneliness
- ✅ Fine-Tuned AI ⇝ Classify dances, keep cultural knowledge accessible

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TECHNICAL PLAN

Step	Task	Tools
1	**Elder Uploads a Dance** Elders submit videos + metadata	Django/Flask + S3
2	**Process Video (3D Data)** Extract motion joints	VIBE
3	**Generate Embeddings** Convert motion to fixed-size vectors	MotionBERT
4	**Fine-Tune** Train a dance classifier	MotionBERT / Transformer
5	**User Selects Dance** Chooses from library	Frontend UI + API
6	**User Practices** Records dance attempt	Frontend Camera
7	**Process User Dance** Again: VIBE + MotionBERT	ML Inference
8	**Compare & Score** Cosine similarity vs. elder dance	Cosine API
9	**Feedback & Recommendations** Suggest similar dances	Fine-Tuned Model API

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ML & IMPLEMENTATION DETAILS

- Model Accuracy Goal: ~85–90% style classification
- Data: Curated dance videos from diverse cultures
- Preprocessing: VIBE → 3D skeleton
- Embedding: MotionBERT (162MB base model)
- Classification: Fine-tuned model on dance style dataset
- Cosine Similarity: Real-time user feedback (score out of 1.0)

Current Status:
- Backend pipeline works (VIBE + MotionBERT + SQLite).
- Fine-tuning not complete due to time constraints.

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DEMO

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FUTURE SCOPE

- AI Dance Style Classification – Fine-tune models to classify cultural dance styles with high accuracy.
- Heritage Chatbot – AI assistant to provide historical & cultural context on dances.
- Fine-Tuned MotionBERT – Train a specialized model for better dance motion recognition.
- Group Dance Recognition – Expand AI to analyze multiple dancers performing together.
- Personalized AI Feedback – Improve real-time movement correction and learning suggestions.
- Crowdsourced Dance Archive – Allow users to contribute and expand the dance database.

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Thank you!

GITHUB: https://github.com/SparshBohra/visualai

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