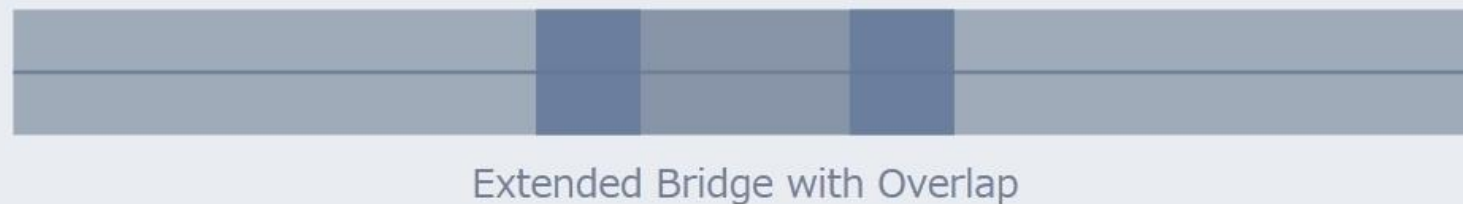# Environmental Sound Bridge Architecture

Current Research Focus

Enhancing Overall Music Experience Through Optimized Transitions

Soundscape Effect

Current Track   Bridge (5s)   Next Track

Environmental   White Noise

Future Extension

Extended Bridge with Overlap

Environmental Sound Bridge: Applications and Benefits

Transition Scenarios and Expected Effects

Classical ── Café Ambience ── Jazz

Smooths genre transitions through familiar social context

High Energy ── Ocean Waves ── Relaxing

Natural energy level transition through calming sounds

Melancholic ── Morning Birds ── Uplifting

Emotional transition through nature's awakening sounds

Core Benefits

Flexibility

Broader playlist combinations

Context Creation

Enhanced immersive experience

Personalization

Customizable music journeys

Data Sources

Spotify API
Music Features

DCASE Framework
Environmental Sound Categories

Web Application
User Evaluation Data

Core Dataset Structure

Music Pair Features

- Tempo, Key, Energy
- Valence, Arousal
- Genre, Popularity

Bridge Data

- Category/Subcategory
- Environmental Context
- Duration Settings

Transition Effects

- 7-Scale Ratings
- Checkbox Responses
- Optional Comments

Dataset Utilization
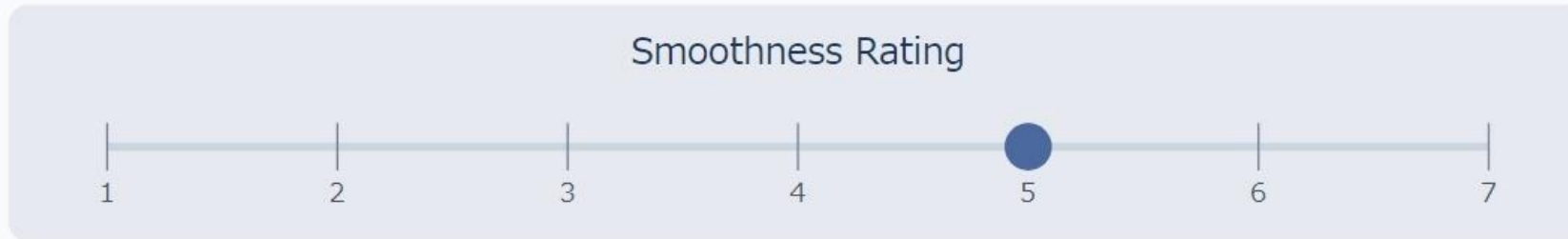
Primary Applications

- Music Experience Design with Environmental Sound
- Feature-Independent Music Recommendation

Future Extensions

- Extended Bridge Analysis
- Listener Attribution Studies

Transition Quality Evaluation System

Primary Metrics: 7-Point Quality Scale

Smoothness Rating

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Perceptual Continuity	Emotional Continuity	Contextual Fit
Volume Transition	Mood Flow	Scene Coherence
Tempo Alignment	Energy Level	Environment Match
Sound Continuity	Emotional Impact	Immersion Level

Supplementary Feedback

☐ Would Skip   ☑ Felt Natural   ☑ Would Use Again