



# Open-Source Science Guidance for AI Music Generation Tools

Version 1.0 – Dec 2025

Prepared by: Petra Kühnle

## 1. Purpose and Scope

This guidance applies to all generative music models that:

- Accept user-uploaded audio (voice, instrument, full tracks)
- Use such uploads for training, fine-tuning, or inference
- Generate new musical output for end users

## 2. Document Control

Version	Date	Author	Editor	Summary of changes
1.0	Dec 2025	Petra Kühnle	Petra Kühnle	Initial release

## 3. Normative References

- Regulation (EU) 2016/679 (GDPR)
- Regulation (EU) 2024/1689 (EU AI Act) – high-risk AI systems
- ICO Guidance on AI and Data Protection (2023–2025)
- ENISA “Securing Machine Learning Algorithms” (2021)

## 4. Definitions

Term	Definition
Training Data Opt-In	Explicit, granular, and withdrawable consent to use uploaded audio for model training
Voice Biometric Data	Special-category personal data under Art. 9 GDPR
Style Leakage	Unintended reproduction of an individual artist's recognizable style in outputs

## 5. Mandatory Requirements

### 5.1 Lawful Basis and Consent Architecture

Req ID	Requirement	Implementation Notes
LB-01	Explicit consent required for any training use	Default OFF, separate checkbox
LB-02	Consent withdrawal must trigger data deletion pipeline	One-click “Remove my data” button
LB-03	No bundling of training consent with service access	Freely given (Recital 43)

## 5.2 Transparency Obligations

Req ID	Requirement
TR-01	Privacy notice at point of upload (layered notice)
TR-02	Inform users if outputs may contain traces of others’ data
TR-03	Provide high-level explanation of how the model works

## 5.3 Data Protection by Design

Req ID	Requirement
DP-01	End-to-end encryption of raw uploads
DP-02	Automatic deletion of raw audio after 30 days unless opted-in for longer retention
DP-03	Training-data anonymization where technically feasible

## 5.4 Fairness and Bias Mitigation

Req ID	Requirement
FB-01	Document demographic/genre distribution of training data
FB-02	Annual bias audit of generated outputs

## 5.5 Data Subject Rights Pipeline

Right	Maximum Response Time	Technical Implementation
Access (Art. 15)	30 days	Download raw + embeddings
Erasure (Art. 17)	Immediate	Delete + model unlearning (best effort)

Right	Maximum Response Time	Technical Implementation
Objection (Art. 21)	Immediate	Block future use

## 6. Data Protection Impact Assessment (DPIA)

Mandatory pre-deployment DPIA template available in Appendix A.

## 7. Record of Processing Activities (Art. 30)

Maintained in Obsidian.

**Note:** Background graphic concept developed in collaboration with Grok (xAI).

## Appendix A – DPIA Template

### Data Protection Impact Assessment (DPIA) for Generative Music AI Systems

**Project Name:** [e.g., AI Music Generation Tool]

**Assessor:** Petra Kühnle

**Date:** Dec 2025

**Version:** 1.0

## 1. Description of Processing

- Purpose:** Generate music from user uploads (audio/voice).
- Data Types:** Voice biometrics, audio files (potential special-category data).
- Scope:** Training/fine-tuning models; outputs for users.

## 2. Necessity and Proportionality

- Is processing necessary? Yes, for model improvement.
- Alternatives? Anonymized data only, but limits functionality.

## 3. Risks to Rights and Freedoms

Risk	Likelihood	Severity	Mitigation
Data breach (voice biometrics)	Medium	High	End-to-end encryption (DP-01)
Style leakage (artist identity)	Low	Medium	Annual bias audits (FB-02)
Unauthorized training use	High	High	Explicit opt-in consent (LB-01)

## 4. Measures to Address Risks

- Technical: Anonymization (DP-03), deletion pipelines (LB-02).
- Organizational: Consent withdrawal flow (Appendix C), transparency notices (TR-01).

## 5. Consultation

- Stakeholders: Legal team, users, data protection officer.
- Outcome: [To be filled after review].

## 6. Approval

- DPO Sign-off: \_\_\_\_\_ Date: \_\_\_\_\_

*(Customize as needed; conduct full DPIA pre-deployment.)*

## Appendix B – Model Card Template for Music Models

### Model Card for [Model Name, e.g., MusicGen AI v1]

**Intended Use:** Generate music from user audio inputs for creative/therapeutic purposes.

**Out of Scope Use:** Commercial exploitation without consent, harmful content generation.

#### Model Details:

- Architecture: [e.g., Transformer-based with audio embeddings].
- Training Data: User-opted audio (demographics documented per FB-01).
- Parameters: [e.g., 1B].
- Compute: [e.g., 100 GPU-hours].

#### Performance:

- Metrics: [e.g., Perceptual audio quality score: 4.5/5].
- Bias Evaluation: Annual audit (FB-02); genre distribution: 40% pop, 30% classical, etc.

#### Ethical Considerations:

- Data Protection: Compliant with GDPR/EU AI Act (high-risk).
- Risks: Style leakage mitigated by anonymization.
- Limitations: May reproduce biases in training data.

#### Maintenance:

- Version: 1.0
- Contact: Petra Kühnle
- Updates: Bias audits yearly.

## Appendix C – Consent Withdrawal Flow Diagram

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The diagram below outlines the consent withdrawal process, designed to fit A4 portrait export (vertical layout).

