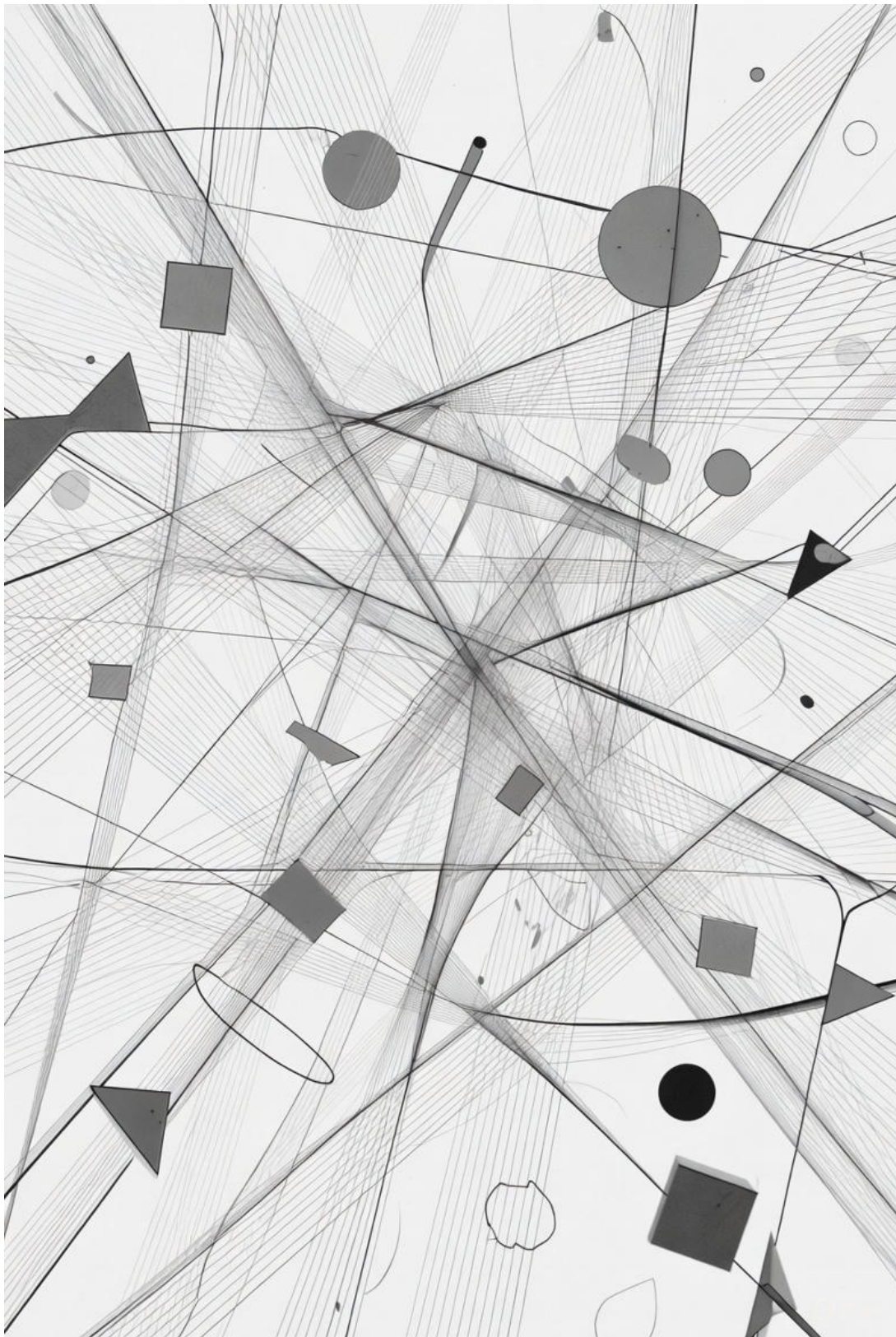


Guidance on Personal Data in Generative Music Systems

Petra Kühnle

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Guidance on Personal Data
in Generative Music Systems



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” \(2021\)](#)
- [Directive \(EU\) 2019/882 \(European Accessibility Act\) – requirements for accessible digital products and services: <https://eur-lex.europa.eu/eli/dir/2019/882/oj>](#)
- **WCAG 2.2 (Web Content Accessibility Guidelines) – Level AA standards for web and document accessibility: <https://www.w3.org/TR/WCAG22/>**

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

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

Tracked in GitHub: [Music AI Vault Repository](#)

Appendix A – DPIA Template

Version 1.0 – December 2025 | Prepared by: Petra Kühnle

This template meets Art. 35 GDPR for high-risk AI under EU AI Act. Complete pre-deployment for models handling personal data (e.g., voice biometrics). Reference guidance (e.g., 5.1 Lawful Basis). Consult DPO; escalate unmitigated risks to authority (e.g., ICO).

1. Project/Processing Overview

- **Project Name:** [Insert]
- **Department/Owner:** [Insert]
- **Date of DPIA:** [Insert]
- **Purpose:** [Describe]
- **Stakeholders:** [List]
- **Scope:** [Per Section 1]
- **High-Risk Classification:** [Explain, e.g., Art. 9 special data]

2. Processing Activities Description

Per Art. 35(7)(a).

- **Personal Data Categories:** [List; ref. Section 4]
- **Data Subjects:** [List]
- **Data Sources:** [e.g., Opt-in uploads]
- **Operations:** [Describe flows]
- **Recipients/Sharing:** [List]
- **Transfers:** [Yes/No; safeguards]
- **Retention:** [e.g., Per DP-02]
- **Automated Decisions:** [Describe]

3. Necessity/Proportionality

Per Art. 35(7)(b).

- **Lawful Basis:** [Justify; ref. 5.1]
- **Necessity:** [Explain]
- **Proportionality:** [Assess]
- **Alternatives:** [List]

4. Risk Identification/Assessment

Per Art. 35(7)(c). Use matrix (Likelihood x Impact).

- **Risks:** [e.g., Privacy, bias (FB-01), style leakage]
- **Likelihood/Impact:** [Rate]
- **Affected Rights:** [e.g., GDPR rights]

5. Mitigations/Safeguards

Per Art. 35(7)(d).

- **Technical:** [e.g., DP-01 encryption]
- **Organizational:** [e.g., FB-02 audits]
- **Transparency:** [e.g., TR-01 notices]
- **Rights Support:** [Ref. 5.5]
- **Residual Risks:** [Reassess]
- **Monitoring:** [Plan]

6. Consultation

- **Internal:** [Describe]
- **External:** [If needed]
- **Data Subjects:** [Optional]

7. Conclusions/Recommendations

- **Assessment:** [Summarize]
- **Action Plan:** [List]
- **Review Triggers:** [List]

8. Sign-Off

- **DPO:** Name/Signature: _____ Date: _____
- **Owner:** Name/Signature: _____ Date: _____
- **Management:** Name/Signature: _____ Date: _____

Annexes (Optional): Flows, matrix, consultations, links to B/C.

Maintain living; review annually. Store per Section 7. Adapt for non-EU (e.g., CCPA). Ref: ICO Guidance (2023–2025), ENISA (2021).

Appendix B – Model Card Template for Music Models

Model Card Template for Music Models | Version 1.0 – December 2025 | Prepared by: Petra Kühnle

Document for transparency/compliance. Complete per model; maintain with Section 7.

1. Model Details

- **Basic Info:** Name/Version/Date/Developers/License/Contact
- **Description:** [Architecture, I/O, capabilities]
- **Resources:** [Compute, carbon estimate]

2. Intended Use

- **Primary:** [Compliant scenarios]
- **Out-of-Scope:** [Prohibited, e.g., no DPIA]

3. Factors

- **Relevant:** [e.g., Bias in genres/demographics]
- **Mitigations:** [Ref. FB-01/02]

4. Evaluation

- **Metrics:** [e.g., FAD, leakage rate]
- **Data:** [Datasets, diversity]
- **Results:** [Summarize]
- **Ethics:** [e.g., Consent-based data]

5. Ethical Considerations/Risks

- **Fairness/Bias:** [Risks/mitigations]
- **Privacy:** [Risks/mitigations, e.g., DP-01/02]
- **Transparency:** [Per TR-03]
- **Other:** [e.g., Misuse]

6. Training Data

- **Sources:** [e.g., Opt-in]
- **Preprocessing:** [e.g., Anonymization]
- **Composition:** [Breakdown; ref. FB-01]
- **Controls:** [Per LB-01–03]

7. Recommendations

- **Deployers:** [e.g., DPIA]
- **Users:** [e.g., Notices]
- **Maintenance:** [Updates]

8. Glossary

[Terms from Section 4]

9. References

[From Section 3]

Update on changes.

Acknowledgments

Cover image generated by Grok with author’s original prompt. Content research accelerated by Grok from public web sources.

Appendix C – Consent Withdrawal Flow Diagram

Consent Withdrawal Flow Diagram | Version 1.0 – December 2025 | Prepared by: Petra Kühnle

Process per LB-02, Arts. 17/21 GDPR. Meets Section 5.5 response times.

Flow Description

1. **User Action:** User clicks “Remove My Data” button
 2. **Confirmation:** System prompts for confirmation
 - If **No** → Process ends
 - If **Yes** → Proceed to deletion pipeline
 3. **Deletion Pipeline:**
 - Delete raw audio (per DP-01/02)
 - Remove embeddings from system
 - Trigger model unlearning (best effort)
 - Block future use (Art. 21)
 4. **Confirmation:** Send email confirmation to user
 5. **Logging:** Record action per Art. 30
 6. **Complete:** Process ends
-

Visual Flowchart: *The Mermaid diagram code below generates an interactive flowchart in digital formats. In PDF exports, refer to the flow description above.*

graph TD

```
A[User Clicks 'Remove My Data'] --> B{Confirm?}
B -->|Yes| C[Deletion Pipeline]
B -->|No| D[End]
C --> E[Delete Raw Audio DP-01/02]
C --> F[Remove Embeddings]
E --> G[Unlearning Best Effort]
F --> G
G --> H[Block Use Art. 21]
H --> I[Email Confirmation]
I --> J[Log Art. 30]
J --> K[End]
```