

5. Ethical implications

Generative Music AI

THE **SOUND** OF AI



Universitat
Pompeu Fabra
Barcelona

MTG
Music Technology
Group

Overview

1. Ethical challenges
2. Golden rules
3. Legal aspects

Artist:

Title:

Max Results:

Filename	Filesize	Bitrate	Freq	Length	User	Connection	Ping
Music\Metalica-The Unforgiven.mp3	2,113,536	128	44100	2:15	aek2cool	Cable	30
Music\Primus - The Thing That Should Not Be (Metalica cover).mp3	6,463,892	128	44100	6:40	karouja	Unknown	41
Incomplete\Metalica - The Unforgiven.mp3	299,008	128	44100	0:24	sam258...	56K	50
Music\Metalica - Master of Puppets.mp3	8,268,331	128	44100	8:30	meekert...	Cable	80
Millenium\Metalica) No Leaf Clover.mp3	8,237,056	192	44100	5:41	ubung	Cable	100
Music\Metalica- Enter Sandman.mp3	5,312,512	128	44100	5:30	jdbrj	Unknown	100
Music\Metalica - Nothing Else Matters.mp3	6,227,968	128	44100	6:25	jdbrj	Unknown	100
Metalica - The Unforgiven II.mp3			44100	6:32	RedOX...	DSL	101
Music\Metalica - Until It Sleeps.mp3			44100	4:29	10sami	Unknown	121
Music\Metalica S&M - No Leaf Clover.mp3			44100	5:41	10sami	Unknown	121
Music\Metalica - The Unforgiven II.mp3			44100	6:32	10sami	Unknown	121
Music\Metalica - Master Of Puppets.mp3			44100	8:29	medicm...	Cable	130
Music\Metalica- And Justice For All.mp3			44100	9:40	mettonjett	DSL	131
Music\Metalica - Whiskey in the jar.mp3			44100	5:03	mettonjett	DSL	131
Music\Metalica - Turn the Page.mp3	5,714,792	128	44100	5:54	mettonjett	DSL	131
Music\Metalica - Stone Cold Crazy.mp3	4,120,660	128	44100	4:17	mettonjett	DSL	131
Music\Metalica - No Leaf Clover.mp3	8,237,056	192	44100	5:41	mettonjett	DSL	131
Music\Metalica - Kill 'em All The Four Horsemen.mp3	2,212,124	192	44100	1:36	mettonjett	DSL	131
Music\Metalica - (Mission Impossible2) Disappear.mp3	2,461,696	192	44100	1:46	mettonjett	DSL	131
Mission Impossible 2 - Metalica - I Disappear.mp3	6,557,858	192	44100	4:32	BigNana1	56K	140
Music\Metalica - The Unforgiven II.mp3	4,849,664	128	44100	5:02	shortinger	Unknown	140
Music\Metalica - Wiskey a jar.mp3	4,875,632	128	44100	5:03	upcydwn	Unknown	151
Music\Metalica) - Enter Sandman.mp3	5,316,022	128	44100	5:30	lghoth	Unknown	171
Music\Mission Impossible 2 - Metalica - I Disappear.mp3	6,557,858	192	44100	4:32	caseygrl...	Unknown	190
waves\Metalica - Ride The Lightning .mp3	6,350,848	128	44100	6:33	golivvwl	Cable	210
Music\Metalica - Whisky in a jar.mp3	6,089,780	160	44100	5:03	Dieuwer...	14.4	210
Music\Metalica-EnterTheSandman.mp3	5,305,863	128	44100	5:29	jmesash	33.6	241
Music\Metalica - Nothing Else Matters.mp3	6,227,968	128	44100	6:26	mrlatus	56K	241
Metalica - Whiskey In The Jar.mp3	4,886,183	128	44100	5:04	voodoo...	Cable	250
download\Metalica - The Unforgiven.mp3	6,131,096	128	44100	6:20	finewine0	56K	271

Copyright infringement

Copyright infringement

- Is it fair to use artists' music to train GM models?

Copyright infringement

- Is it fair to use artists' music to train GM models?
- Is artists' consent necessary to use their music?

ARTIFICIAL INTELLIGENCE / TECH / CREATORS

AI art tools Stable Diffusion and Midjourney targeted with copyright lawsuit



A collage of AI-generated images created using Stable Diffusion. Image: [The Verge via Lexica](#)

/ The suit claims generative AI art tools violate copyright law by scraping artists' work from the web without their consent.

By [James Vincent](#), a senior reporter who has covered AI, robotics, and more for eight years at The Verge.

Jan 16, 2023, 12:28 PM GMT+1 | [27 Comments](#) / [27 New](#)



A trio of artists have launched a lawsuit against Stability AI and Midjourney, creators of AI art generators Stable Diffusion and Midjourney, and artist portfolio platform DeviantArt, which recently created its own AI art generator, DreamUp.

Copyright infringement

- Is it fair to use artists' music to train GM models?
- Is artists' consent necessary to use their music?
- What constitutes copyright infringement?

Copyright infringement

- Is it fair to use artists' music to train GM models?
- Is artists' consent necessary to use their music?
- What constitutes copyright infringement?
- How can we compensate artists?

New biz opportunity: [DataMxr](#)

- On-demand licensed music datasets
- Customers: music AI companies
- Artists compensated

Replacing musicians

- Is it OK to use AI to generate full compositions?



Replacing musicians

- Is it OK to use AI to generate full compositions?
- Is it OK to use AI to reproduce the likeness / voice of musicians?

Energy consumption

- Training large GM models takes a lot of energy
- Inference is also energivore

My golden rules

- Keep musicians at the centre

My golden rules

- Keep musicians at the centre
- Have conversations with musicians

My golden rules

- Keep musicians at the centre
- Have conversations with musicians
- Enhance instead of replace

What “keep musicians at the centre” means

- Transparency
- Control
- Consent
- Remuneration

**ME AFTER TELLING PEOPLE I
UNDERSTAND THE LEGAL ASPECTS OF MUSIC AI**



Generative music and legal

- No general legal framework

Generative music and legal

- No general legal framework
- AI is evolving too fast for legislators to keep up

Generative music and legal

- No general legal framework
- AI is evolving too fast for legislators to keep up
- Legal decisions are popping up

LEGAL NEWS 08/18/2023

AI-Generated Works Aren't Protected By Copyrights, Federal Judge Rules

As questions swirl about how artificial intelligence will impact the music business, a federal judge offers one definitive answer.

BY BILL DONAHUE



AI art lacks
human
involvement

When's creative input enough to qualify for copyright?



When's creative input enough to qualify for copyright?



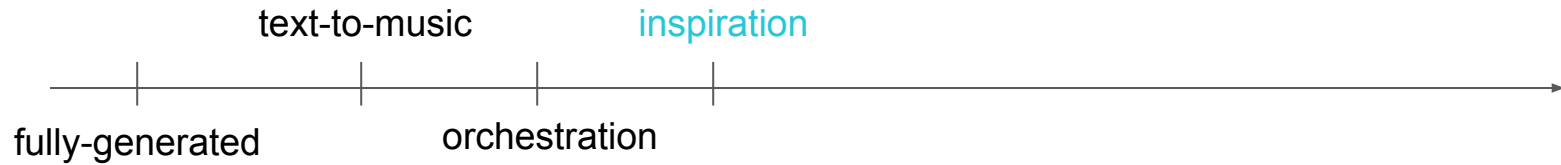
When's creative input enough to qualify for copyright?



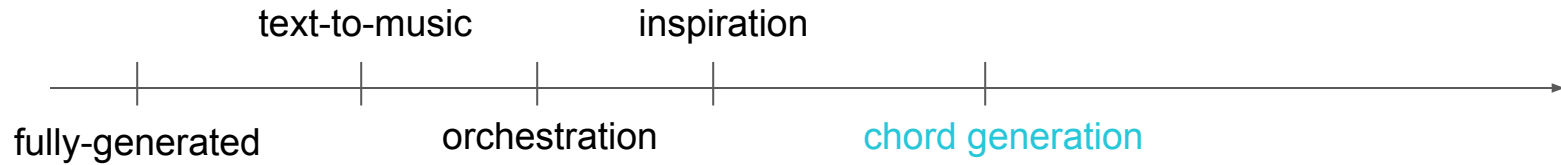
When's creative input enough to qualify for copyright?



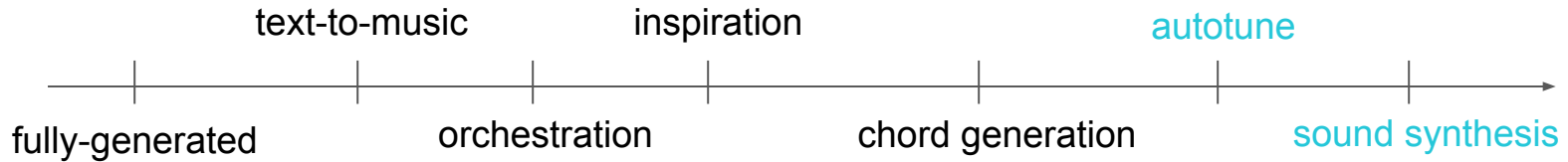
When's creative input enough to qualify for copyright?



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When's creative input enough to qualify for copyright?



EU AI Act: first regulation on artificial intelligence

Society Updated: 14-06-2023 - 14:06

Created: 08-06-2023 - 11:40



The use of artificial intelligence in the EU will be regulated by the AI Act, the world's first comprehensive AI law. Find out how it will protect you.



© AI image/Limitless Visions/Adobe Stock

This illustration of artificial intelligence has in fact been generated by AI


Foundation models compliance with the EU AI Act

Category	Keyword	Requirement (summarized)	Section
Data	Data sources	Describe data sources used to train the foundation model.	Amendment 771, Annex VIII, Section C, page 348
	Data governance	Use data that is subject to data governance measures (suitability, bias, and appropriate mitigation) to train the foundation model.	Amendment 399, Article 28b, page 200
	Copyrighted data	Summarize copyrighted data used to train the foundation model.	Amendment 399, Article 28b, page 200
Compute	Compute	Disclose compute (model size, computer power, training time) used to train the foundation model.	Amendment 771, Annex VIII, Section C, page 348
	Energy	Measure energy consumption and take steps to reduce energy use in training the foundation model.	Amendment 399, Article 28b, page 200
Model	Capabilities/limitations	Describe capabilities and limitations of the foundation model.	Amendment 771, Annex VIII, Section C, page 348
	Risks/mitigations	Describe foreseeable risks, associated mitigations, and justify any non-mitigated risks of the foundation model.	Amendment 771, Annex VIII, Section C, page 348 and Amendment 399, Article 28b, page 200
	Evaluations	Benchmark the foundation model on public/industry standard benchmarks.	Amendment 771, Annex VIII, Section C, page 348 and Amendment 399, Article 28b, page 200
	Testing	Report the results of internal and external testing of the foundation model.	Amendment 771, Annex VIII, Section C, page 348 and Amendment 399, Article 28b, page 200
Deployment	Machine-generated content	Disclose content from a generative foundation model is machine-generated and not human-generated.	Amendment 101, Recital 60g, page 76
	Member states	Disclose EU member states where the foundation model is on the market.	Amendment 771, Annex VIII, Section C, page 348
	Downstream documentation	Provide sufficient technical compliance for downstream compliance with the EU AI Act.	Amendment 101, Recital 60g, page 76 and Amendment 399, Article 28b, page 200

Grading Foundation Model Providers' Compliance with the Draft EU AI Act

Source: Stanford Center for Research on Foundation Models (CRFM), Institute for Human-Centered Artificial Intelligence (HAI)

	 OpenAI	 cohere	 stability.ai	 ANTHROPIC	 Google	 BigScience	 Meta	 AI21 labs	 ALEPH ALPHA	 EleutherAI	
Draft AI Act Requirements	GPT-4	Cohere Command	Stable Diffusion v2	Claude 1	PaLM 2	BLOOM	LLaMA	Jurassic-2	Luminous	GPT-NeoX	Totals
Data sources	● ○ ○ ○	● ● ● ○	● ● ● ●	○ ○ ○ ○	● ● ● ○	● ● ● ●	● ● ● ●	○ ○ ○ ○	○ ○ ○ ○	● ● ● ●	22
Data governance	● ● ○ ○	● ● ● ○	● ● ○ ○	○ ○ ○ ○	● ● ● ○	● ● ● ●	● ● ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ● ○	19
Copyrighted data	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ● ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ● ●	7
Compute	○ ○ ○ ○	○ ○ ○ ○	● ● ● ●	○ ○ ○ ○	○ ○ ○ ○	● ● ● ●	● ● ● ●	○ ○ ○ ○	● ○ ○ ○	● ● ● ●	17
Energy	○ ○ ○ ○	● ○ ○ ○	● ● ● ●	○ ○ ○ ○	○ ○ ○ ○	● ● ● ●	● ● ● ●	○ ○ ○ ○	○ ○ ○ ○	● ● ● ●	16
Capabilities & limitations	● ● ● ●	● ● ● ○	● ● ● ●	● ○ ○ ○	● ● ● ●	● ● ● ○	● ● ○ ○	● ● ○ ○	● ○ ○ ○	● ● ● ○	27
Risks & mitigations	● ● ● ○	● ● ○ ○	● ○ ○ ○	● ○ ○ ○	● ● ● ○	● ● ○ ○	● ● ○ ○	● ● ○ ○	○ ○ ○ ○	● ○ ○ ○	16
Evaluations	● ● ● ●	● ● ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ● ○	● ● ● ○	● ● ○ ○	○ ○ ○ ○	● ○ ○ ○	● ○ ○ ○	15
Testing	● ● ● ○	● ● ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ● ○	● ● ○ ○	○ ○ ○ ○	● ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	10
Machine-generated content	● ● ● ○	● ● ● ○	○ ○ ○ ○	● ● ● ○	● ● ● ●	● ● ○ ○	○ ○ ○ ○	● ● ● ●	● ○ ○ ○	● ● ● ○	21
Member states	● ● ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ○ ○	● ● ● ●	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ○ ○ ○	● ● ● ○	9
Downstream documentation	● ● ● ○	● ● ● ●	● ● ● ●	○ ○ ○ ○	● ● ● ●	● ● ● ●	● ● ○ ○	○ ○ ○ ○	○ ○ ○ ○	● ● ● ○	24
Totals	25 / 48	23 / 48	22 / 48	7 / 48	27 / 48	36 / 48	21 / 48	8 / 48	5 / 48	29 / 48	

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AI Art Wars: Japan Says AI Model Training Doesn't Violate Copyright

Japan takes an early stand on a hot topic in generative artificial intelligence.



By [Jose Antonio Lanz](#)

Jun 5, 2023

3 min read



Image created by Decrypt using AI

Will the EU
fall behind?

Will other
regions comply?
(Brussels effect)

A 2-way copyright world?

- EU / US enforce copyright
- Non-western countries are generative AI heavens

Key takeaways

- GM presents several ethical questions
 - Copyright infringement
 - Musicians' replacement
 - Energy consumption

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 - Copyright infringement
 - Musicians' replacement
 - Energy consumption
- **Keep musicians at the centre**

Key takeaways

- GM presents several ethical questions
 - Copyright infringement
 - Musicians' replacement
 - Energy consumption
- Keep musicians at the centre
- Legislation is lagging behind

Key takeaways

- GM presents several ethical questions
 - Copyright infringement
 - Musicians' replacement
 - Energy consumption
- Keep musicians at the centre
- Legislation is lagging behind
- EU AI Act may set a precedent, or backfire

What next?

Symbolic vs audio generation