

Copyright and the Generative AI Supply Chain

James Grimmelmann
Cornell { Tech | Law School }

International Federation of Reproduction Rights Organisations
January 17, 2024

Katherine Lee, A. Feder Cooper, & James Grimmelmann,
*Talkin' 'Bout AI Generation: Copyright and the Generative AI
Supply Chain*, Journal of the Copyright Society of the
U.S.A. (forthcoming 2024)



Katherine Lee



A. Feder Cooper

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J. DOE 1 and J. DOE 2, individually and on
behalf of all others similarly situated,

Individual and Representative Plaintiffs,

v.

THE NEW YORK TIMES COMPANY

Plaintiff,

v.

MICROSOFT CORPORATION, OPENAI, INC.,
OPENAI LP, OPENAI GP, LLC, OPENAI, LLC,
OPENAI OPCO LLC, OPENAI GLOBAL LLC,
OAI CORPORATION, LLC, and OPENAI
HOLDINGS, LLC,

Defendants.

§., P.M., N.G., R.F., J.D. and G.R.,
and on behalf of all others similarly

Plaintiffs,

GLE DEEPMIND, and

individual;
individual;
N, an individual;

representative Plaintiffs,

-ai v.

PAUL TREMBLAY, an indi
MONA AWAD, an individu

OPENAI, INC., a D
Delaware limited par
limited liability corp
limited liability company; OPENAI STARTU

PLAINTIFFS P.M., K.S., B.B., S.J., N.G., C.B.,
S.N., J.P., S.A., L.M., D.C., C.L., C.G, R.F., N.J.,
and R.R., individually, and on behalf of all others
similarly situated,

Plaintiffs,

vs.

META PLATFORMS INC a Delaware

SARAH ANDERSEN, an individual;
KELLY MCKERNAN, an individual;
KARLA ORTIZ, an individual,

Individual and Representative Plaintiffs,

v.

STABILITY AI LTD., a UK corporation;
STABILITY AI, INC., a Delaware
corporation; MIDJOURNEY, INC., a
Delaware corporation; DEVIANTART, INC.,
a Delaware corporation,

Defendants.

OPENAI, INC., a D
L.P., a Delaware lim
Delaware limited liab
Delaware limited liab
GP I, L.L.C., a De

STARTUP FUND I, OPENAI LP, OPENAI INCORPORATED,
OPENAI STARTUP OPENAI GP, LLC, OPENAI STARTUP FUND
I, LP, OPENAI STARTUP FUND GP I, LLC,
OPENAI STARTUP FUND MANAGEMENT
LLC, MICROSOFT CORPORATION and DOES
1 through 20, inclusive,

Does generative AI
infringe copyright?

Obviously yes

Copyright in one slide

- “Copyright protection subsists ... in original works of authorship fixed in any tangible medium of expression” 17 U.S.C. § 102(a)
- “[T]he owner of copyright ... has the exclusive right[] ... to reproduce the copyrighted work” 17 U.S.C. § 106(1)

Overview

The Common Crawl corpus contains petabytes of data, regularly collected since 2008.

Choose a crawl... ▾

The corpus contains raw web page data, metadata extracts, and text extracts.

Common Crawl data is stored on Amazon Web Services' Public Data Sets and on multiple academic cloud platforms across the world.

Learn how to [Get Started](#).

Access to the corpus hosted by Amazon is [free](#).

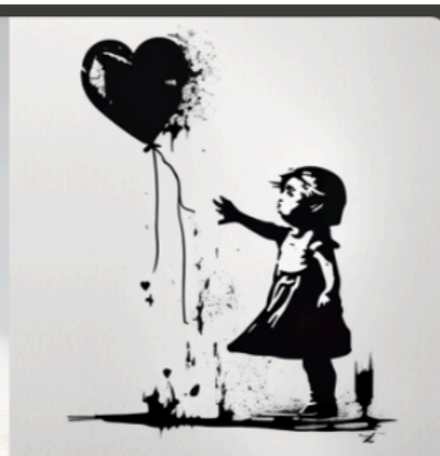
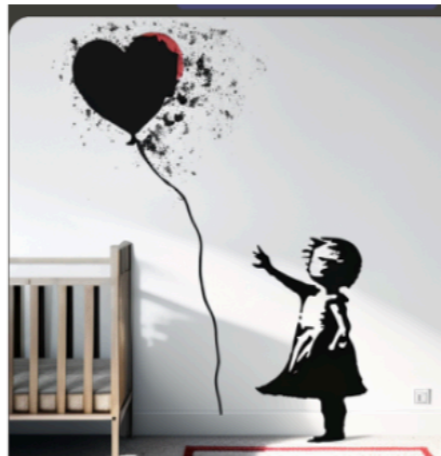
You may use Amazon's cloud platform to run analysis jobs directly against it or you can download it, whole or in part.

You can search for pages in our corpus using the [Common Crawl URL Index](#).

Check out the [Example Projects](#), view [Use Cases](#), or [Statistics](#) for our crawls.









Copies everywhere

- There are copies of millions of works
 - In the training datasets
 - In the outputs
 - In the trained models (which can be seen “with the aid of a machine or device,” 17 U.S.C. § 101)
- All of these are infringing
- Or I should say, *potentially* infringing ...

Does generative AI
infringe copyright?

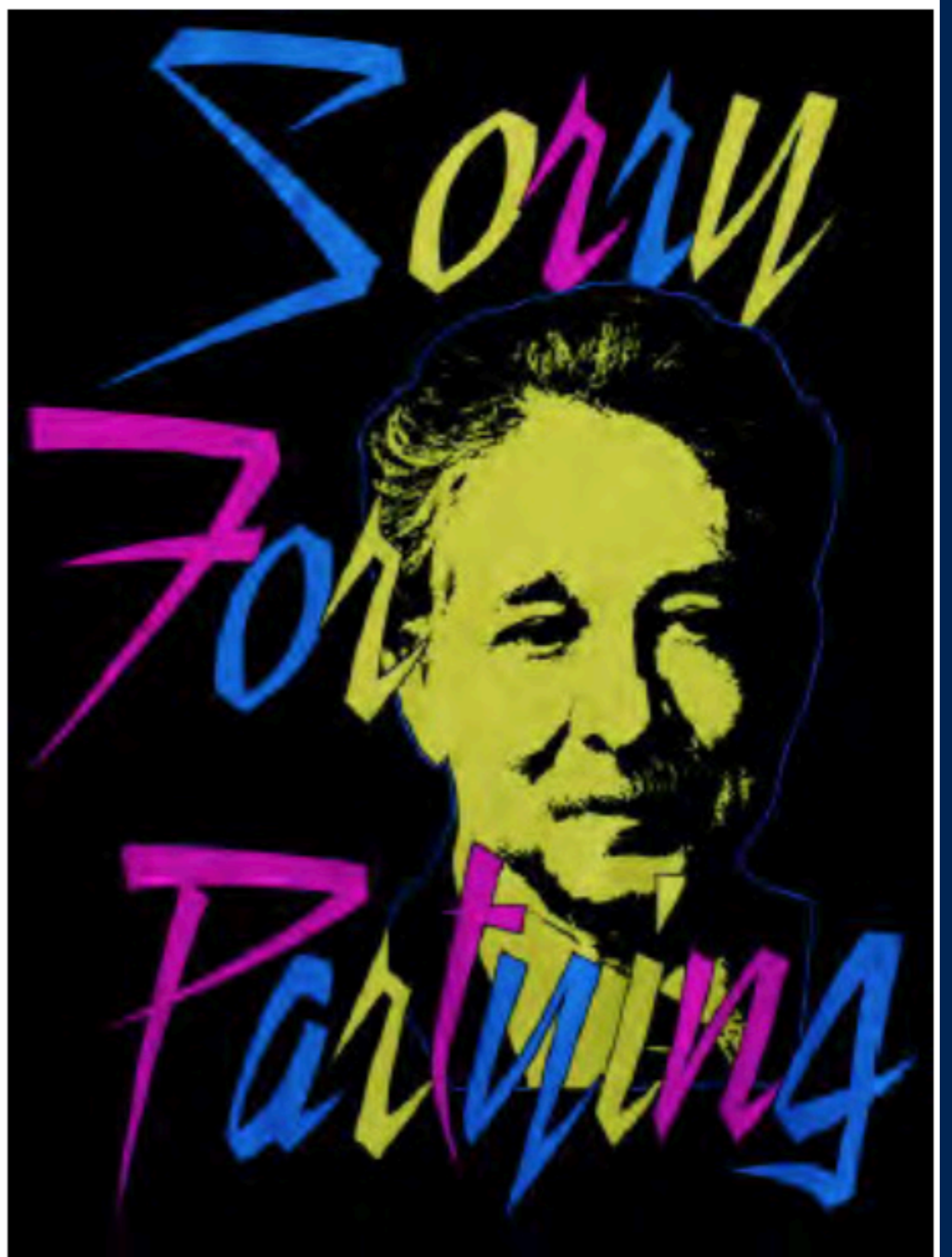
Obviously no

Fair use

17 U.S.C. § 107

“[The fair use of a copyrighted work ... for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. ... [T]he factors to be considered shall include—

- (1) the purpose and character of the use, ...
- (2) the nature of the copyrighted work;
- (3) the amount and substantiality of the portion used ... ; and
- (4) the effect of the use upon the potential market for or value of the copyrighted work.”



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Videos

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Quest

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GPT-5

Books

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Flights

About 2,910 results (0.36 seconds)



Metaculus

<https://www.metaculus.com> > ai

The Metaculus Lens on AI

Metaculus is a community dedicated to generating accurate predictions about future real-world events by aggregating the collective wisdom, insight, ...



Metaculus

<https://www.metaculus.com> > questions > date-of-artifi...

Date of Artificial General Intelligence

When will the first general AI system be devised, tested, and publicly announced? Jun 10, 2032. 2.26k predictions.



Metaculus

<https://www.metaculus.com> > questions > date-weakly-...

Date Weakly General AI is Publicly Known

When will the first weakly general AI system be devised, tested, and publicly announced? ... Since the inception of the field, the goal of Artificial Intelligence ...

People also ask

What is the prediction for Metaculus AI?



What is the expected date for AGI?

⁹ BHP was founded in Melbourne in 1885. Billiton was founded in 1860. In June 2001, the two companies merged. In the 2003-2004 financial year, it had total revenue of \$34.087 billion, a total market capitalization of \$136.35 billion. It employed ⁴ 35,000 people, making it the second-largest mining group company globally. It was listed on stock exchanges in Australia, London, and New York. The company is the world's third-largest supplier of iron ore. The company has more than 100 years of business relationships with China, including importing and exporting mineral products and steel, minerals, and land and sea oil exploration. Board Chairman Don Argus and CEO Charles Goodyear.

Over the past 100 years, from the trade of resource products, domestic and foreign joint ventures to the procurement of mining machinery and equipment in China, BHP Billiton has established a long-term and friendly all-round partnership with Chinese business partners. ¹¹ As the world's second-largest economy, China is critical to developing BHP Billiton. Over the past 40 years, BHP Billiton has supplied China with more than ¹⁵ 2 billion tons of iron ore and coking coal, liquefied natural gas, copper concentrate, nickel, and other resource products in the process of China's rapid industrialization and urbanization, ¹⁴ providing a solid resource guarantee for China's development. Like many multinational companies, BHP Billiton is a vital participant, witness, contributor, and beneficiary of China's reform and opening up and has forged an indissoluble ⁸ relationship with China.

BHP Billiton Group is the world's largest production and distribution enterprise of various

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Match Overview

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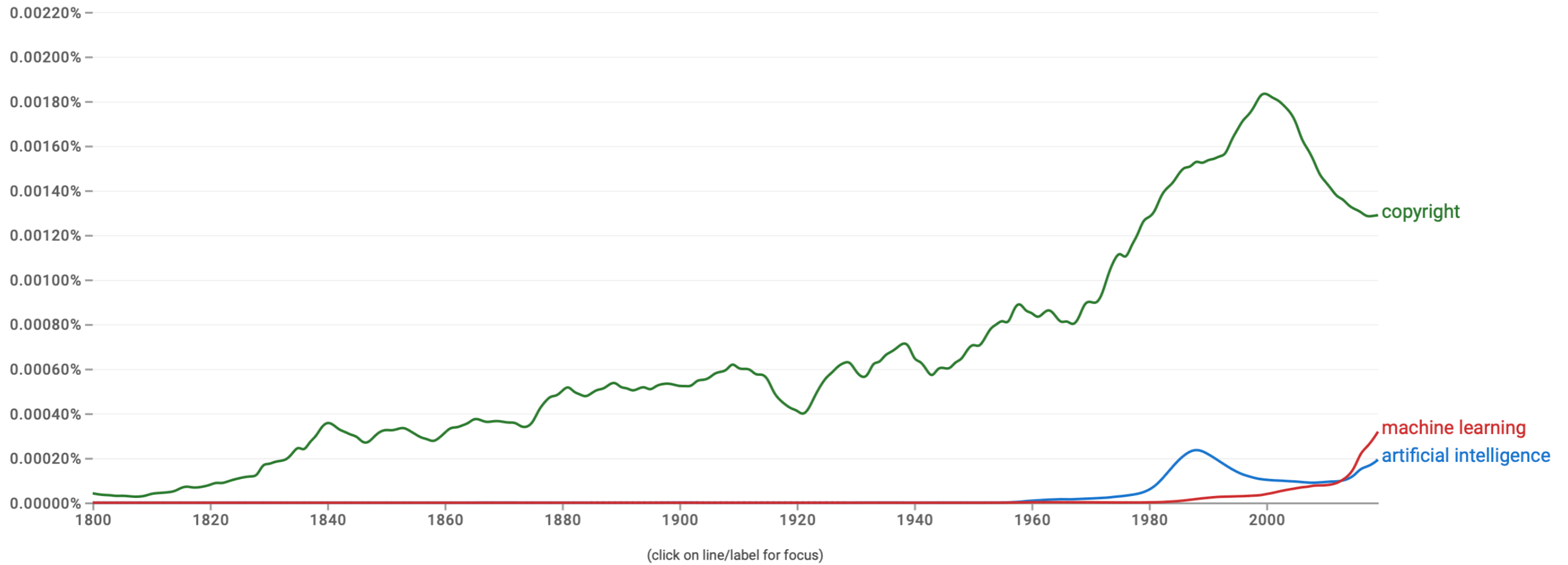
artificial intelligence,machine learning,copyright

1800 - 2019

English (2019)

Case-Insensitive

Smoothing







Above and below: Saturday September 6, Maine State Fairgrounds, Lewiston, Maine

Saturday September 6
 Maine State Fairgrounds, Lewiston, Maine
 Opening acts include guitarist Roy Buchanan (once billed by his record company as "the best unknown guitarist in the world"), plus Ernie and Earl Cate performing with Levon Helm. In 1983 the Cate Brothers joined Helm, Rick Danko, Garth Hudson, and Richard Manuel to form the second—Rebbie Robertson-less—incarnation of The Band.



Thursday September 4
 Providence Civic Center
 Providence, Rhode Island
 First wordless jam around "Supplication," the Weir/Barlow tune introduced in the mid-1970s. In this outing, the jam bridges "Ramble On Rose" and "Estimated Prophet."

Wednesday September 3
 Springfield Civic Center Arena,
 Springfield, Massachusetts

Tuesday September 2
 Community War Memorial,
 Rochester, New York

SEPTEMBER				
1	2	3	4	5

WARFIELD THEATRE
 100 MARKET ST - SF
 TUE 9/25/80 8PM
 ADULT \$12.50

LEFT CENTER
 CR 5 1
 THU 9/25/80 8PM
 LEFT CENTER
 CR 5 1

The Warfield/Radio City Show

The Dead's real 15th anniversary celebration in 1980 spanned two months, two coasts, and eventually spawned two albums, *Reckoning* and *Dead Set* (see pages 261 and 265). The bicoastal settings for the shows were very different—San Francisco's Warfield Theatre was an intimate house of 2,400 seats, while New York City's Radio City Music Hall was, well, Radio City—but the Dead's performances in both places were some of the most treasured moments of the band's early '80s years.

For both the Warfield and Radio City shows, the band returned to a concert similar to the "Evening with the Grateful Dead" shows of a decade before—this time, the opening set from the New Riders of the Purple Sage. Each performance began with an acoustic set followed by two electric sets. The Dead hadn't done much of acoustic work in the 1970s, and they didn't have much time to rehearse for the Warfield run began, so by some accounts the first acoustic sets were shaky—not that anyone minded.

Demand for both shows was huge. The Warfield run was extended by three nights, and when tickets went on sale for the Radio City shows, the line at the box office practically filled Rockefeller Center—a publicity bonanza for the band. Many media types who'd been counting the Grateful Dead out for years were surprised.



Above: The Dead play 15 dates at the Warfield Theatre in September.

Monday October 6
Tuesday October 7
 Warfield Theatre,
 San Francisco, California

OCTOBER						
1	2	3	4	5	6	7

Thursday September 25
Friday September 26
Saturday September 27
 Warfield Theatre,
 San Francisco, California

Thursday October 2
Friday October 3
Saturday October 4
 Warfield Theatre, San Francisco, California
 Saturday night and The Dead play "Dead Set Blues" for the first time in 10 years. Performances of "Deal" and "Feel Like a Stranger" at the show appear on *Dead Set*.

Monday September 29
Tuesday September 30
 Warfield Theatre, San Francisco, California
 Monday's show sees the band's first performance of "Heaven Help The Fool," from Bob Weir's 1978 solo album of the same name.

The final Warfield show saw one of Bill Graham's most inspired acts of showmanship. Returning onstage for the encore, the boys found a table set with glasses and a bottle of champagne—then the house lights came up to reveal the entire audience making a champagne toast to the band.

The otherwise brilliant Radio City run was marred by a bizarre dispute between the band and Radio City's management. The latter objected to promotional posters showing the inevitable skeletons flanking the venerable venue. Evidently not well versed in Grateful Dead iconography, the Radio City execs interpreted the posters as a coded message that the band thought that Radio City's days were numbered, and they slapped the band with a million-dollar lawsuit. The misunderstanding was quickly cleared up.

Bassist bedeviled

The last Radio City night was Halloween, and appropriately enough, technical gremlins kept Phil out of the mix until "It Must Have Been the Roses," five songs into the first set.

The show's hosts, Al Franken and Tom Davis, *Saturday Night Live* writers and performers (and Dead fans), conducted a wickedly funny ongoing parody of Jerry Lewis's annual telethon. They targeted his over-the-top appeals on behalf of needy children, known as "Jerry's Kid's." But the donations in this case were a hit of acid and a ticket to the next GD gig. In addition to generating albums the Halloween Radio City was broadcast on closed-circuit TV and simulcast on FM stations. The show was also released on video, *Dead Ahead*, in 1995.

The significance of the Grateful Dead's pioneering return to nonelectric performance wouldn't be fully appreciated until 1989, when MTV's *Unplugged* series began turning on a new generation of rock fans to the delights of acoustic music.

"Radio City, a beautiful and classy venue, brought awe and respect from the 6,000 or so Deadheads who piled in each night. It was also a dreamlike run—every gig had something we dreamed of since we first started lacing up our Grateful Dead sneakers: an acoustic set."
 ALAN SHEEKER, MUSIC PHOTOJOURNALIST, 2003

Thursday October 9
Friday October 10
 Warfield Theatre, San Francisco, California
 Friday's version of "Jack a Roe" appears on *Dead Set*.

9	10	11	12	13	14	15	16	17
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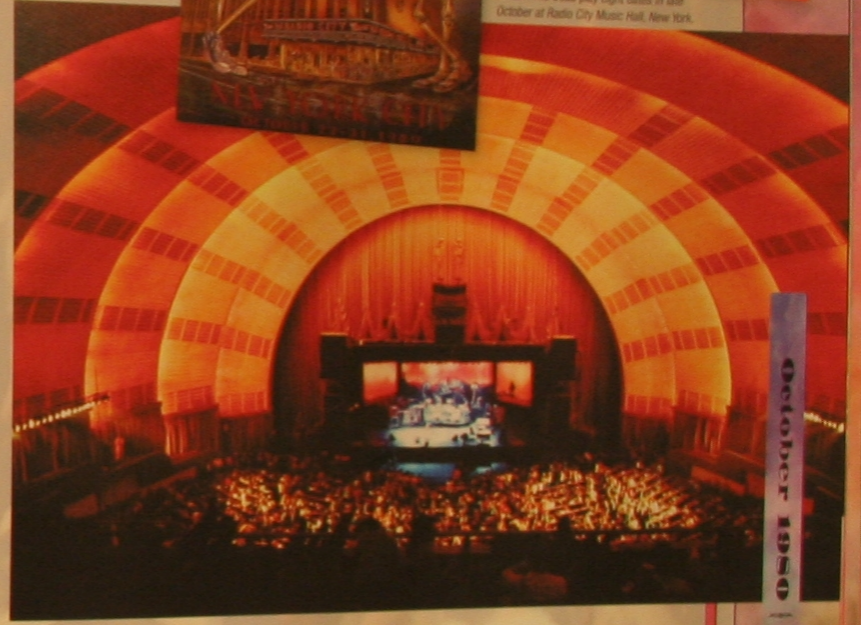
Saturday October 11
Monday October 13
Tuesday October 14
 Warfield Theatre, San Francisco, California
 Three extra shows are added to the Warfield run, and John Cipollina joins the band on Saturday night to play "Not Fade Away" > "Wharf Rat" > "Goin' Down the Road"; the same night's performances of "Deep Elem Blues" and "Loser" turn up on *Reckoning*.



Left: Tour poster for the Dead's October concerts at New York's Radio City Music Hall.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
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Below: The Dead play eight dates in late October at Radio City Music Hall, New York.



October 1980

18	19	20	21	22	23	24
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Saturday October 18
Sunday October 19
 Saenger Theater, New Orleans, Louisiana
 Between the Warfield and Radio City runs, the band take the acoustic/electric/electric format to the Crescent City (below) for two nights.



25	26	27
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Saturday October 25
Sunday October 26
Monday October 27
 Radio City Music Hall, New York, New York
 Saturday's performance of "Franklin's Tower" appears on *Dead Set*.

Wednesday October 22
Thursday October 23
 Radio City Music Hall,
 New York, New York

The night's "Drums"/"Fire on the Mountain" make it onto *Dead Set*.

28	29	30	31
----	----	----	----

Wednesday October 29
Thursday October 30
 Radio City Music Hall, New York, New York
 Drummer Billy Cobham—a jazz and fusion legend who'd performed with, among others, Horace Silver and Miles Davis—joins Bill and Mickey for the Thursday "Drums."

JOHN CIPOLLINA JOINS THE GRATEFUL DEAD
 TONIGHT
 8:00 PM
 RADIO CITY MUSIC HALL
 NEW YORK, NY

Fair use everywhere

- Outputs: transformative fair use
- Training data: nonexpressive fair use
- Models: nonexpressive *and* transformative fair use
- ... but what if *some* of the outputs infringe?

Does generative AI
infringe copyright?

Obviously only by users





napster.



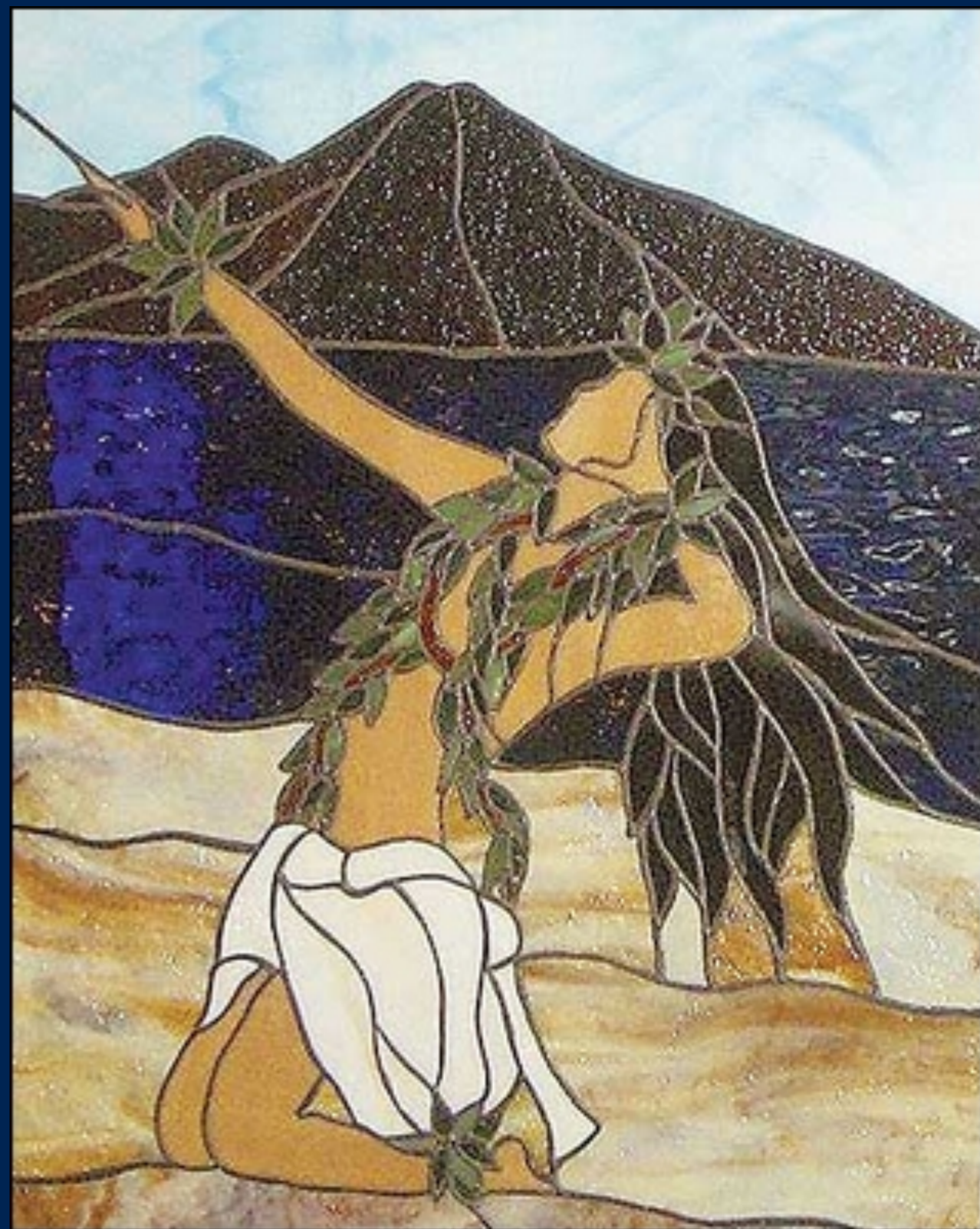
Why not notice and takedown?

- Where does the Copyright Act authorize it?
- How can copyright owners find infringing works?
- How can AI companies block infringing outputs?

Stop.

Does generative AI
infringe copyright?

It depends





Training Set



*Caption: Living in the light
with Ann Graham Lotz*

Generated Image



*Prompt:
Ann Graham Lotz*





Michael Green

@triplux



Experiments I conducted with DALL·E 2 from [@OpenAI](#) replicating styles of well known portrait photographers using photo-realistic AI. 🧵

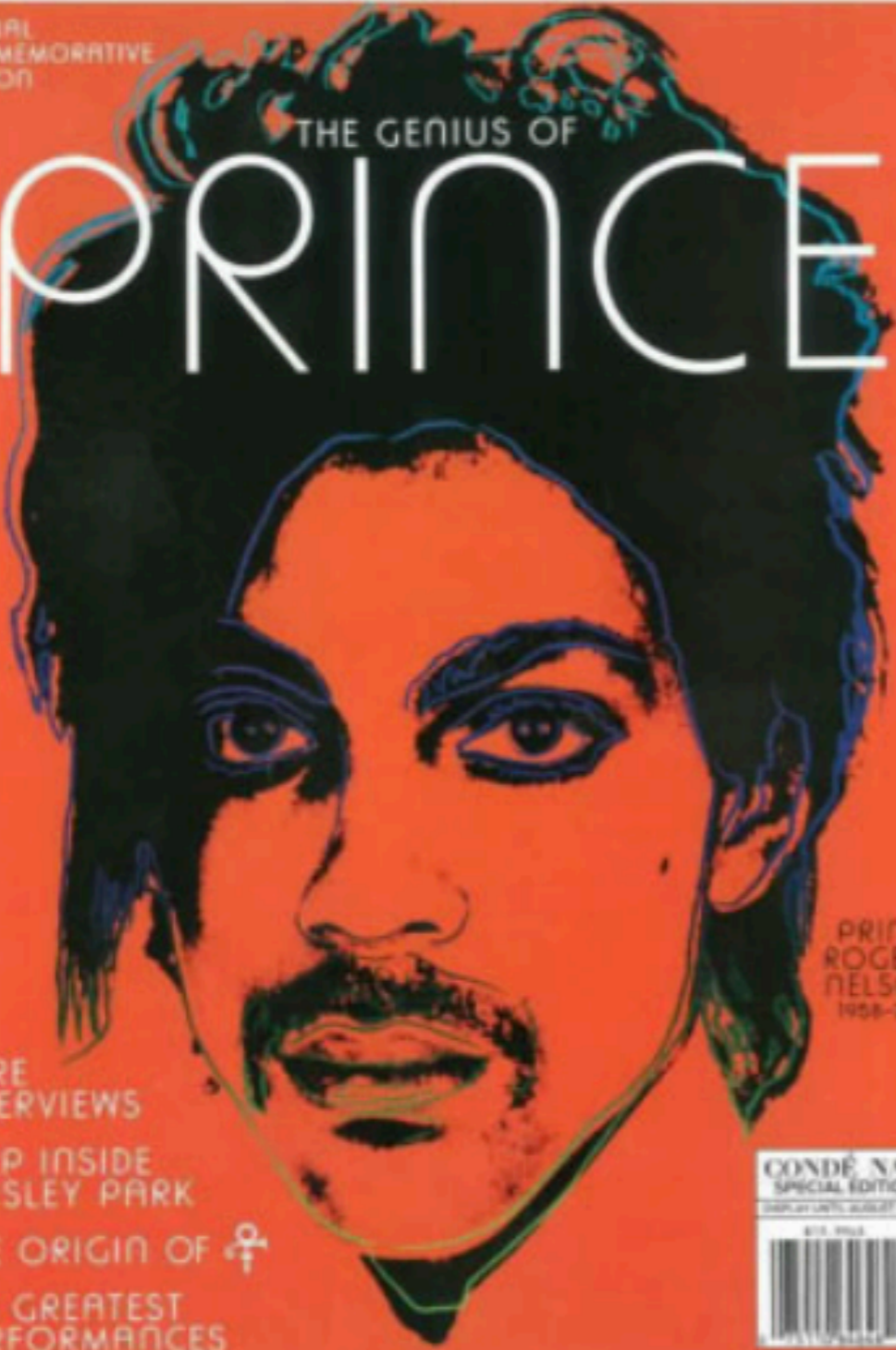
1. Dorothea Lange



11:23 AM · Jun 30, 2022

SPECIAL
COMMEMORATIVE
EDITION

THE GENIUS OF
PRINCE



PRINCE
ROGERS
NELSON
1958-2016

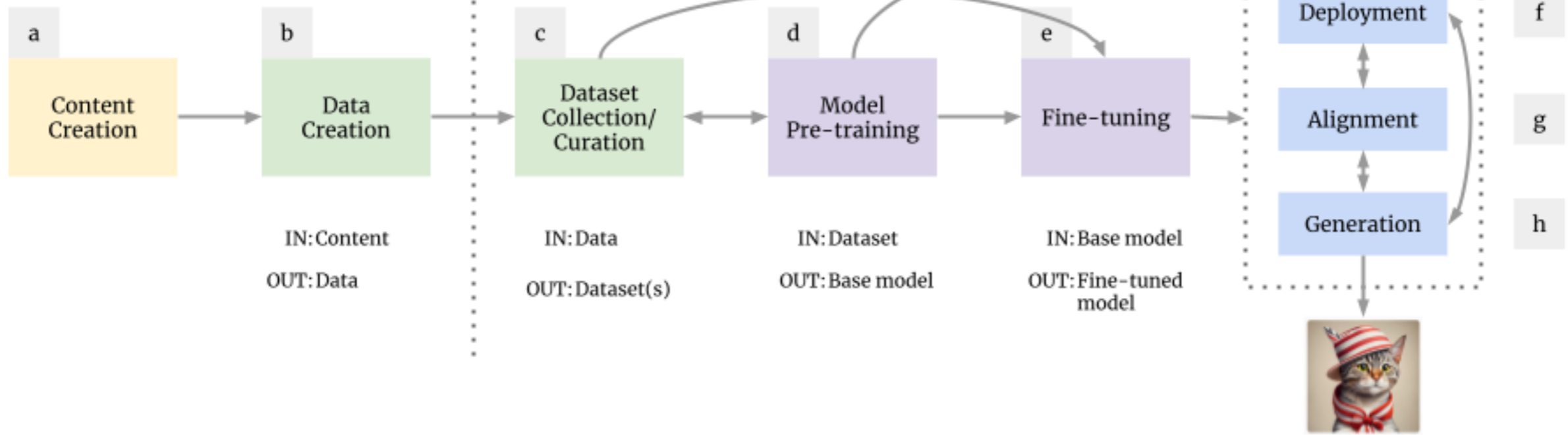
RARE
INTERVIEWS

DEEP INSIDE
PAISLEY PARK

THE ORIGIN OF ♀

HIS GREATEST
PERFORMANCES





A diverse supply chain

- A dataset/model/app could ...
 - ... draw on multiple upstream ones
 - ... be used by multiple downstream ones
- Every stage could be ...
 - ... public or private
 - ... proprietary or open
 - ... carried out by the same or different parties

Introducing Llama 2

The next generation of our
open source large language model

Llama 2 is available for free for research and commercial use

[Download the Model](#)

Bard

A conversational AI tool
by Google

Collaborate with Bard to brainstorm
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productivity.

[Try Bard now](#)

Compare:

- “anna and elsa”
- “ice princess”
- “watch frozen 2”

Zooming out

Four dramatic futures

Strong copyright:

- Big Copyright wins again
- The anticommons

Weak copyright:

- Big Tech wins again
- *You* get a model, and *you* get a model, and ...

Muddling through

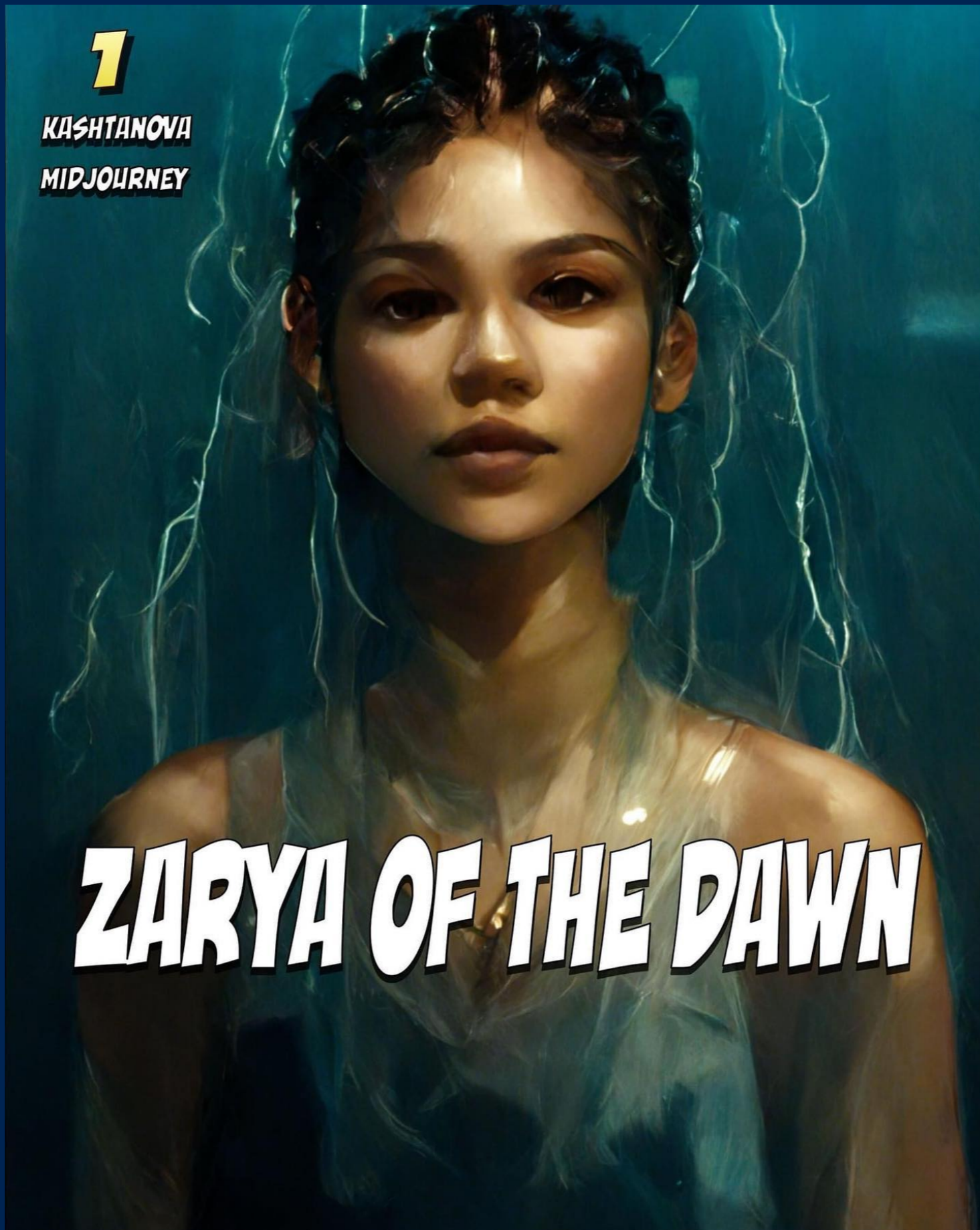
- Copyright defense pledges
- Good guys and bad guys
- Copyright is a hammer

1

KASHTANOVA

MIDJOURNEY

ZARYA OF THE DAWN





Anno Octavo

Annæ Reginae.

An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books, in the Authors or Purchasers of such Copies, during the Times therein mentioned.



Whereas Printers, Booksellers, and other Persons have of late frequently taken the Liberty of Printing, Reprinting, and Publishing, or causing to be Printed, Reprinted, and Published Books, and other Writings, without the Consent of the Authors or Proprietors of such Books and Writings, to their very great Detriment, and too often to the Ruin of them and their Families: For Preventing therefore such Practices for the future, and for the

Encouragement of Learned Men to Compose and Write useful Books: May it please Your Majesty, that it may be Enacted, and be it Enacted by the Queens most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons in this present Parliament assembled, and by the Authority of the same, That from and after the Tenth Day of April, One thousand seven hundred and ten, the Author of any Book or Books already Printed, who hath not Transferred to any other the Copy or Copies of such Book or Books, Share or Shares thereof, or the Bookeller or Bookellers, Printer or Printers, or other Person or Persons, who hath or have Purchased or acquired the Copy or Copies of any Book or Books, in order to Print or Reprint the same, shall have the sole Right and Liberty of Printing such Book and Books by the Term of One and twenty Years, to Commence from the said Tenth Day of April, and so forth: and that the Author of any Book or Books already Composed and not Printed and Published, or that shall hereafter be Composed, and his Assigns, or Assigns, shall have the sole Liberty of Printing and Reprinting such Book and Books for the Term of four-

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