

A stylized illustration in shades of red and white. A central figure of a person is shown in a dynamic, balancing pose, holding a smartphone. From this central figure, several thin red lines radiate outwards, connecting to various social media and digital communication icons. These icons include speech bubbles, a thumbs-up gesture, a bell (notification), a location pin, a shopping bag, a laptop displaying a landscape image, and several stylized human faces. The background is a solid dark red color.

# /the social dilemma\_

MUSIC FROM THE NETFLIX ORIGINAL DOCUMENTARY

MUSIC BY **MARK CRAWFORD**

# our social dilemma

## FROM THE FILMMAKERS:

As our information ecosystem is fractured and filtered, polarizing our society, we are trying to lift the social media spell that has been cast on us all. Algorithms promote content that sparks outrage and hate, and they amplify biases using the data we feed them. Social media platforms make it possible for anyone to reach huge numbers of people with phenomenal ease, offering up tools to sow unrest and fuel political divisions. Persuasive design techniques like push notifications and the alluring endless scroll of our newsfeeds have created a feedback loop that keeps us glued to our devices. This is a foundational problem, wherein technology's promise to keep us connected has given rise to a host of unintended consequences. If we can't address our broken information ecosystem, we'll never be able to address the challenges that plague humanity.



- Jeff Orlowski, Director  
& Larissa Rhodes, Producer  
*The Social Dilemma*

From the creators of *Chasing Ice* and *Chasing Coral*, *The Social Dilemma* blends documentary investigation and narrative drama to disrupt the disrupters, unveiling the hidden machinations behind everyone's favorite social media and search platforms.

Never before have a handful of tech designers had such control over the way billions of us think, act, and live our lives.

Sign up to host a screening, and find resources to help shift how technology is used, designed, and regulated:

[www.thesocialdilemma.com](http://www.thesocialdilemma.com)





Any sufficiently  
advanced technology  
is indistinguishable  
from magic.

ARTHUR C. CLARKE

# track list

1. LOGOS
2. A TOTALLY NORMAL WORLD
3. AM I REALLY THAT BAD?
4. SERVER ROOM
5. A CALL TO ARMS
6. MANIPULATED
7. MAGIC TRICKS
8. HOOKED IN THE CLASSROOM
9. GROWTH HACKING
10. PROGRAMMED AT A DEEPER LEVEL
11. ADDICTED
12. KITCHEN SAFE
13. FAMILY DINNER
14. THE KIDS ARE NOT ALRIGHT
15. THE BET
16. PERCEPTIONS OF BEAUTY
17. THEREMIN LULLABY
18. TIME OFFLINE
19. HOMINID BRAINS
20. THE AI'S ARE LOSING
21. MACHINE LEARNING
22. LATE NIGHT SNACK
23. CHECKMATE HUMANITY
24. THE SLIDING SCALE
25. EXPONENTIAL HEARSAY
26. MYANMAR
27. CAUGHT IN THE CROWD
28. RAPID DEGRADATION OF SOCIETY
29. SENATE HEARING
30. JUSTIN DROPS THE MIC
31. SHUT IT DOWN
32. WELCOME TO THE DRUM MACHINE
33. I PUT A SPELL ON YOU *performed by  
Brandi Carlile & Renée Elise Goldsberry*





# /the music dilemma\_

Photo Credit: Matthew Staver

# \_behind the scenes

## COMPOSER MARK CRAWFORD FINDS MUSICAL INSPIRATION IN MACHINES AND AI:

In 2016, Gaetan Hadjeres and François Pachet of the Sony Computer Science Laboratories in Paris tested a group of 1600 people -- more than 400 of them were professional musicians or music students -- on whether they could correctly identify which one of two melodies sounded more like Bach. One melody was an actual excerpt from one of Bach's 352 chorales, while the other melody was generated by their new deep learning-powered program called DeepBach.

It turns out, around **half** the voters incorrectly identified DeepBach's music, thinking it was actual music from Bach.<sup>1</sup>

Stories like these can strike the fear of God in artists like me. Will we reach a point when music will be cheaper and just as effective if recorded by a computer algorithm? And can human creativity be broken down into ones and zeros to be replicated and replaced by technology?

I was pondering these questions as I recorded field sound for the interviews featured in *The Social Dilemma*. Listening to each two to four hour interview session of the former Silicon Valley insiders and experts, I felt as though I was receiving a world-class education about the current state of technology, social media, and the age of humans vs. machines. I started thinking about the relationship between technology and music.

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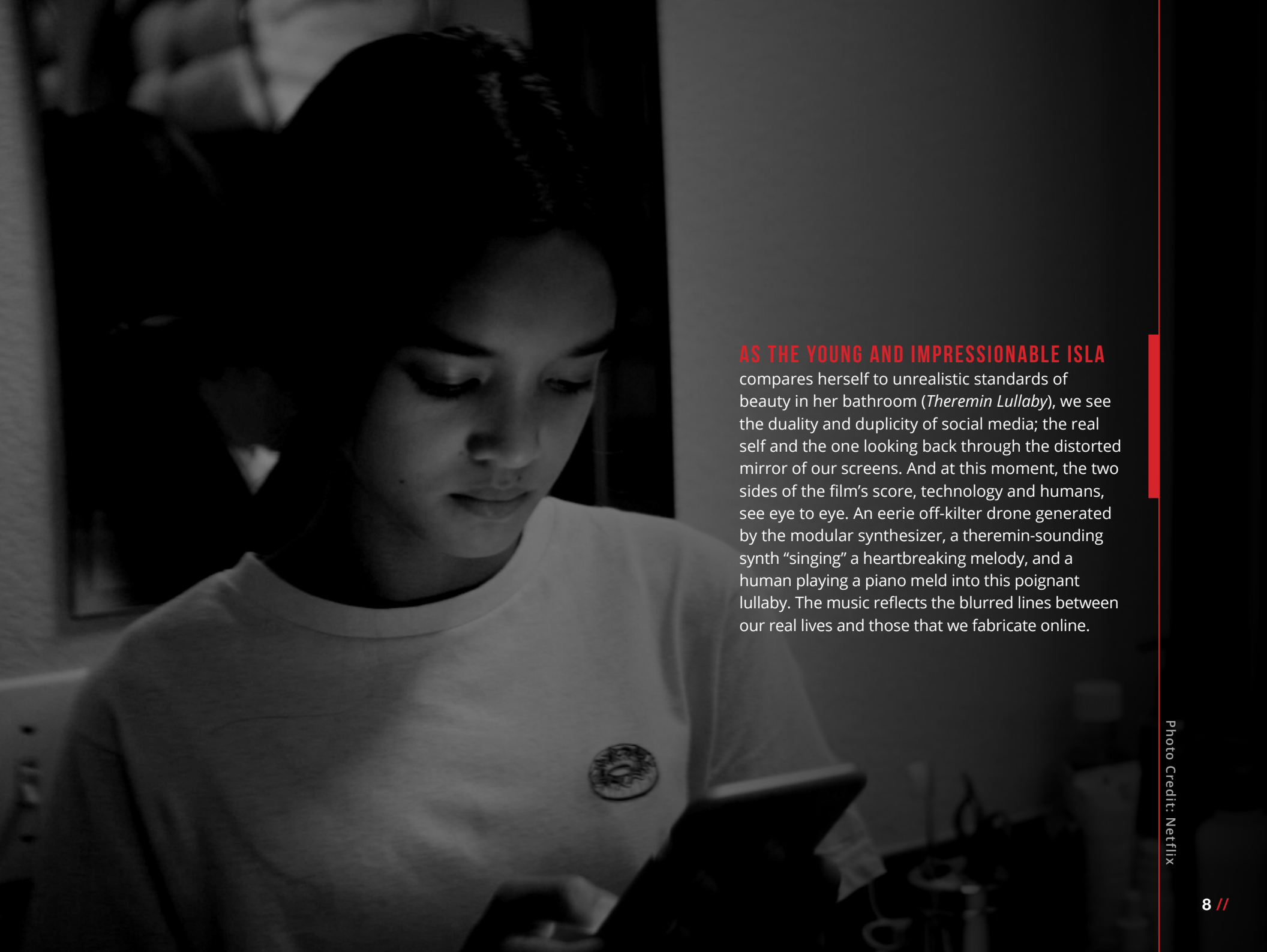
<sup>1</sup> Bennett II, James. (2016). Can Algorithms Dream Up Bach Chorales? DeepBach Says Yes. *New York Public Radio WQXR*. Retrieved from <https://www.wqxr.org/story/meet-deepbach-program-building-bach-chorales/>



**I BEGAN RESEARCHING HOW TO BUILD THE MUSIC** into the DNA of the story early on in the production process, playing with some early music technology starting with a crude sound-generating Serge modular synthesizer that my co-producer, Conor Abbott Brown, just happened to own. We recorded multiple hours of fiddling with knobs and patching wires to create otherworldly sounds. At times, it sounded as though we were awakening a living creature trying to speak from within the depths of the circuit boards. That border between what sounds human and what sounds like a machine was the kernel of a concept that led me to forming what is now the score for *The Social Dilemma*.

We started exploring more ways of humanizing electronic sounds, and also discovering approaches to dehumanizing human-made acoustic sounds. I also thought about how the music might transform and degrade along with the lives of the film's main characters. I played with how the score could subtly influence and narrate a musical story underneath the drama on screen, similarly to the way the technology behind our device screens manipulates our thoughts and beliefs.

If you listen to the music's narrative arc throughout the film, you can hear how it follows a downward spiral mirroring the film's message. It starts with a fairly traditional "human-sounding" orchestral film score during the film's opening credit sequence. The piano and strings are crisp and precise, but as we introduce Ben's world, we can also sense that something is lurking just out of frame. As the story progresses, the film's insiders hail from the darker underbelly of the tech world, introducing more abstract musical sounds and elements to the score's palette, while the human-played instruments begin to take on a mechanical form.



### AS THE YOUNG AND IMPRESSIONABLE ISLA

compares herself to unrealistic standards of beauty in her bathroom (*Theremin Lullaby*), we see the duality and duplicity of social media; the real self and the one looking back through the distorted mirror of our screens. And at this moment, the two sides of the film's score, technology and humans, see eye to eye. An eerie off-kilter drone generated by the modular synthesizer, a theremin-sounding synth "singing" a heartbreaking melody, and a human playing a piano meld into this poignant lullaby. The music reflects the blurred lines between our real lives and those that we fabricate online.





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Ana\_C

46



## WHEN BEN FINALLY CAVES AND CHECKS HIS PHONE

while rummaging in the kitchen for a *Late Night Snack*, this is when the film's traditional music structure really starts to break down. The technology (modular synth echoing an otherworldly *whomping* noise) starts to transform the strings and upright bass into abstract mechanical groaning sounds. "Goodbye," to human-sounding music, and welcome to the machine. The AIs have finally broached Ben's world and now the music is going to be puppettered by the machine. From here, the music takes a John Cage/ Suzanne Ciani-inspired nosedive to find the boundary between what is music and what is electronically generated noise.

I can't wait for the weekend.

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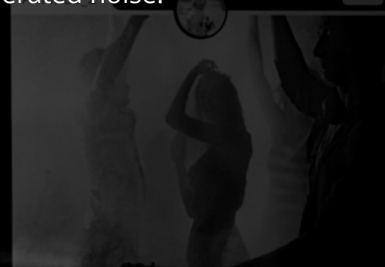
Stacey\_P



Peaceful Protest Surrounds  
Around 4,000 protesters gathered around  
nation's capital to voice their support for

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Last rooftop party of summer! #ihatewinter

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Photo Credit: Netflix



**AT THE FILM'S CONCLUSION WHEN  
VINCENT KARTHEISER'S AI WORLD**

is breaking down and rearranging itself, the computer music and human-played instruments finally mesh and harmonize, bringing back all the themes and motifs we've heard throughout the film, allowing for some hope in our ability to harmonize our world.



◀ BRANDI CARLILE

## I PUT A SPELL ON YOU

During the sequence when Ben finally succumbs to his social media addiction, we hear Nina Simone's cover of "I Put a Spell on You." For a bonus track on the film's soundtrack, Brandi Carlile & Renée Elise Goldsberry lend their voices to add a hauntingly beautiful and bewitching aspect to the song's original lyrics, while incorporating a new set of lyrics to tie into the film's themes. Composer Mark Crawford's arrangement pays homage to past covers of the song, and infuses it with electronic and acoustic elements mined from the film's score.



◀ RENÉE ELISE GOLDSBERRY





Photo Credit: Matthew Staver

**THANK YOU** to supervising sound editor Richard Gould at Skywalker Sound for exploring the balance between sound design and music. If you listen very carefully, the room tone Richard placed within the AI's world changes tone based on the music and the story. In the case of the film's resolution, it harmonizes with the music to create a sense of humanity and technology living in harmony.

I want to thank director Jeff Orlowski for giving me the opportunity to musically paint across the world he created, and for being an open and honest collaborator and friend. I want to thank editor Davis Coombe for hearing the potential in my music and working it into early DNA of the film. Thank you to Mark Venezia, music mixer and producer at our small town's recording studio, Wind Over the Earth, for tirelessly and passionately helping bring this large undertaking to life in such a short amount of time. Thank you to arranger and co-producer Conor Abbott Brown for being a creative confidant and constantly blowing me away with how far we can push the boundaries of the instruments we incorporate into our scores. And thank you to all the amazing musicians that took the leap to explore how to add a soul to computers, and how to take the soul out of their instruments.

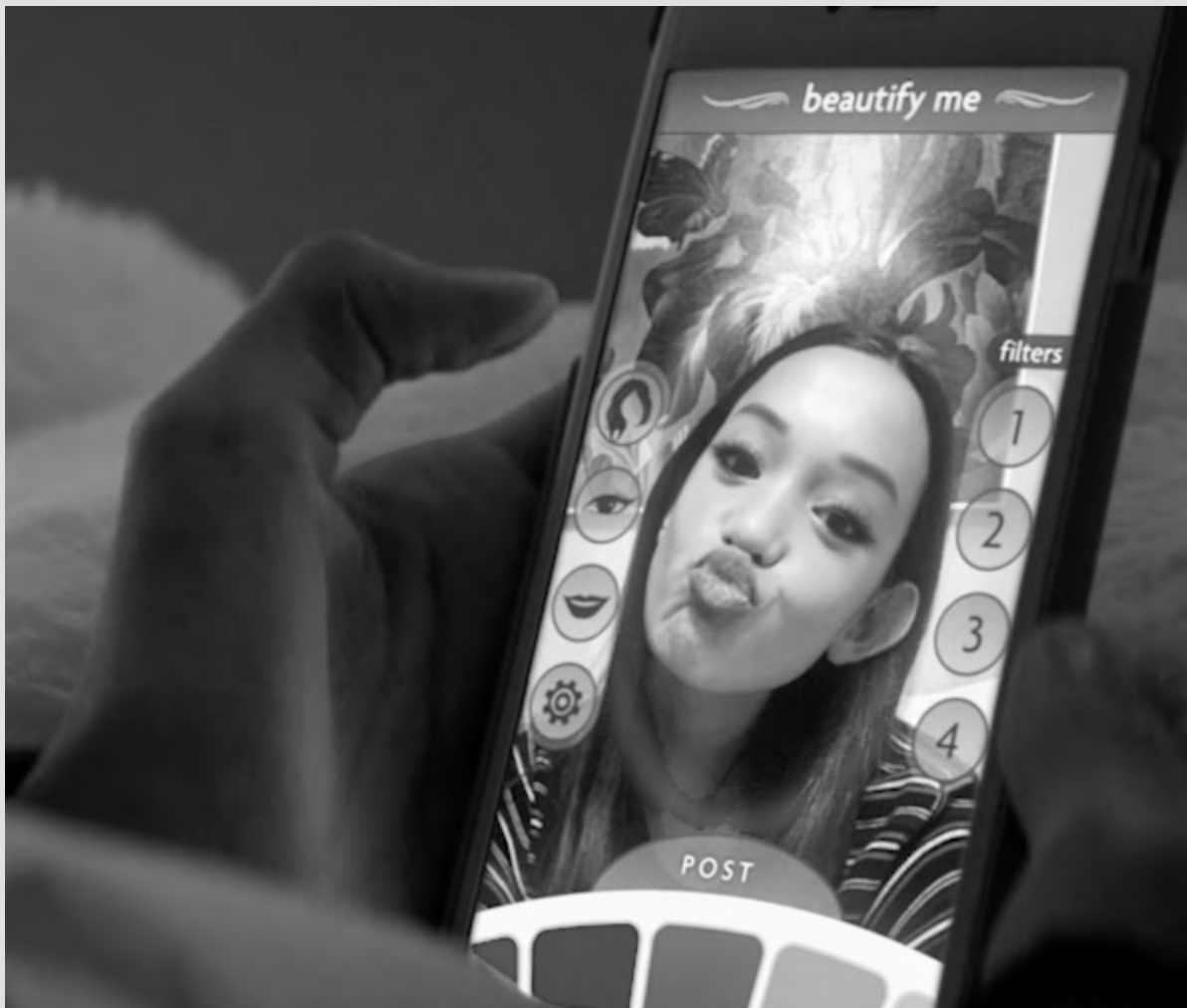
I owe an enormous debt of gratitude to Brandi Carlile and Renée Elise Goldsberry for shining a spotlight on this issue and elevating the music. This collaboration means the world to me as an artist and their powerful voices will help bring visibility to the invisible orchestration happening on the other side of our screens.

Lastly, thank you to my wife for hearing and giving honest feedback for my wacky musical ideas, for feeding me when I lost track of the day and time, for dancing with me to Queen's "Don't Stop Me Now" to pump me up in the mornings, and for always believing in me, even during the times when it was difficult to believe in myself.

I still wonder if computers will eventually replace human creativity, but hopefully through this score, I've stood my ground. To connect about the score and how we can beat the robots together, drop me a line at [www.markcrawfordmusic.com](http://www.markcrawfordmusic.com).



# \_i put a spell on you credits



## **I Put a Spell on You**

Written by *Jay Hawkins*  
EMI Unart Catalog Inc.

Performed by *Brandi Carlile & Renée Elise Goldsberry*

Brandi Carlile Vocals Recorded by *Sean Patrick Quackenbush and Nate Yaccino*  
Recorded at *The Barn, Maple Valley, WA*  
*Low Country Sound/ Elektra Records LLC*

Renée Elise Goldsberry Vocals Recorded by *Jordan Purvis*  
Recorded at *Borderlight Entertainment, Inc.*

Produced by *Mark Crawford and Mark Venezia*  
Additional Lyrics by *Mark Crawford*  
Recorded and Mixed by *Mark Venezia*

*Niki Tredinnick* - Baritone and Alto Saxophone  
*Luke Tredinnick* - Trumpet and Trombone  
*Chad E. Mathis* - Upright and Electric Bass  
*Andrew Frank* - Guitar  
*Gemma Wilson* - Background Vocals  
*Mark Crawford* - Piano

Special Thanks to  
*Mark Cunningham, Joseph Abate, Nancy Gates, Dannielle Thomas, Rena Ronson, Grace Royer, Jenny Truong, UTA, Elektra, Margo Scott, Gregg Nadel, Ashley Brooks, Jordan Hudock, Dag Sandsmark, Jeff Orlowski, Larissa Rhodes, Bre Graziano, Sierra Voss, The Exposure Labs Team*

Music Legal Counsel by  
*EISNER, LLP*  
*EVAN KRAUSS, ESQ. / JORDAN GUTGLASS, ESQ.*

# \_album credits

## **Original Music Composed & Produced By**

MARK CRAWFORD

## **Arranger & Music Co-Producer**

CONOR ABBOTT BROWN

## **Recorded & Mixed by**

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AT WIND OVER THE EARTH  
LONGMONT, COLORADO

## **Mastering by**

JIM WILSON MASTERING

## **Violin**

FELIX PETIT  
LESLEE SMUCKER  
RENÉE HEMSING PATTEN

## **Viola**

LAUREN SPAULDING  
ANIEL CABÁN

## **Cello**

JAKE SAUNDERS

## **Horn**

JOHANNA L. BURIAN

## **Piano**

JIEUN LEE  
MARK CRAWFORD

## **Upright Bass**

ERIC THORIN

## **Vibraphone**

JONATHAN SADLER

## **Bass Guitar**

CHAD E. MATHIS

## **Slide Guitar**

MARK VENEZIA

## **Vocals**

GISELLE COLLAZO  
PATRICIA APPEGATE-LOETZ  
JEANNE MCADARA

## **Thanks**

ERIK SWANSON & ROB GEDELIAN

## **Album Booklet Design**

YOLKWORKS

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JORDAN GUTGLASS, ESQ.

## **Special Thanks**

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ZANA LAWRENCE, SARAFINA DIFELICE,  
JAMES WALLER, MAXIM KARLIK, BRIAN  
MCNELIS, TARA FINEGAN, ALON LEVITAN

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BRIAN MCNELIS, DARREN BLUMENTHAL &  
TARA FINEGAN

## **Director of A&R**

ERIC CRAIG

## **Art Director**

JOHN BERGIN

## **Administrative Coordinators**

DON SMITH, ERICA POPE

## **Special Thanks**

TONY GILES

