

ISMIR 2023 SUPPLEMENTARY MATERIAL: TEXT-TO-LYRICS GENERATION WITH IMAGE-BASED SEMANTICS AND REDUCED RISK OF PLAGIARISM

A. EXAMPLES OF INPUT TEXT, INTERMEDIATE IMAGE, AND GENERATED LYRICS (SECTION 6)

In addition to the two examples shown in Table 2, the following table shows more examples of lyrics generated by the proposed text-to-lyrics generation method with the anti-plagiarism method. The top four input texts are sentences selected from the SICK dataset, and the bottom four input texts are parts of lyrics selected from the RWC Music Database. Details on how to generate these examples are described in Section 6.

Input text	Image (intermediate representation)	Generated lyrics
The kids are playing outdoors near a man with a smile	⇒ 	⇒ There's a place in the yard And no one else would give up on me I was born to sit and watch it grow, yeah But still you're stuck with my family
Several young people are posing for a photo and holding beers	⇒ 	⇒ We got a drink beer, We're all in our town tonight So we don't know what to think That I can't see you anymore
A lone biker is jumping in the air	⇒ 	⇒ You've got to ride, And I'll be riding all my life, It feels like heaven when it's gone, baby My wheels on the edge of time...
People are on a beach full of sand by the ocean and are enjoying a day full of sun	⇒ 	⇒ Now the sea is shining And every time you're near to me, oh yeah Oh, it's a beautiful day now I'm going to get away from here all alone
The sun is up on a brand new day I've got to face the music	⇒ 	⇒ So come on, come on And play the music for a song Let your hair down and give it all up The sun will rise above our heads
Last night I dreamt of an angel Who flew over me, and I saw beauty	⇒ 	⇒ She was a star That night of angels came from the sky And I knew she would not fly away But now it's time to face the world with you
In the Spring when gentle rains turn to showers	⇒ 	⇒ The rain is falling down My heart will be filled With no words that are left inside I am alone
Standing at the crossroads I hear a voice Asking about tomorrow and where I'm going	⇒ 	⇒ Standing on a cross Waiting for the day I'd give anything to say To make it through my heart

B. DETAILED RESULTS OF GENERATED LYRICS AND HUMAN SIMILARITY JUDGMENTS (SECTION 6)

The following tables show all detailed results of evaluating the subjective similarity between the input text and the generated lyrics through a human evaluator. The “No.” in the tables corresponds to the actual ranking in the Billboard “Hot 100 Songs” chart in 2022 (<https://www.billboard.com/charts/year-end/2022/hot-100-songs/>). The “Input text” was summarized from the first-verse lyrics of each song by using ChatGPT-3.5 (<https://chat.openai.com/chat>) on March 31, 2023 (we entered a prompt like “*Rephrase the following text into a short sentence.*”). The “Generated lyrics” was generated from the input text via the “Image” (intermediate representation). The “Judgement” shows the result of classifying whether the impressions of the input text and the generated lyrics were “Similar” or “Dissimilar”.

Please note that as written in the paper, we intentionally did not use pre-trained large-scale language models (LLMs) and ChatGPT for lyrics generation in order to avoid the risk of plagiarizing copyrighted works in their training data and propose the anti-plagiarism method.

No.	Input text	Image	Generated lyrics	Judgment
1	I often play TV, avoiding introspection, but today we're mirrored on-screen you need a better life, which I can't provide; the road once flooded, now nightfall.		It's the end of my days I feel like this And you've been away for so long and it feels like this to me The edge of my head, but there is no more There's another sun coming down on me	Dissimilar
2	I'm held back by gravity, hold out your palm, let's leave it, nothing to say, obstacles everywhere, irreplaceable, and I'll stay.		I'm running from your hands It's the only way to run through these eyes, And I feel like flying over the edge of my head You know this is true, life's a lie!	Similar
3	Still wasted from last night; time wasted here; can't feel like you feel; fucked up without you here.		I'm sorry for the best But now it's time to settle down Your mind's on me And when you're lying around	Dissimilar
4	No gold in river, washed hands forever, hope in water, won't swim, drowning in silence, let me in.		I'm just a little bit of space and time Just a simple way, you'll know me when to find your place You're just a little bit more precious than mine Let's take this moment from mine	Dissimilar
5	Got arrowed, new kiss, fruit & more, want it all, guitar's lipstick, fuel up, dance under stars, feel in' like.		I'm a rock, Baby don't let the sun go up in here I'm gonna get my groove on You're gonna lose it all right	Similar
6	City visible; Now targeted; Frat can't alpha; Sweet pineapple juice; Keep pleasing; Heat-filled hard drive; Don't compete with Jack; Jesus, not Givenchy; Give me reasons for sleeping on me; Received plaques in peak season, thanks to UPS; Believe and achieve.		The night is young It's time to go, and live with life In the corner of my dreams And you can see it in my eyes	Dissimilar
7	This song was excluded because the input text and the generated lyrics contained explicit content.			
8	Young blood believes in tomorrow, but without your love, I feel empty and unable to follow you.		I'm a man, he's my age And if you don't know what it means when we're together You'll understand that the love that is not real and But no one's gonna love you forever' til your day	Similar
9	This song was excluded because the generated lyrics contained explicit content.			
10	Human sign when things go wrong, her scent lingers and temptation's strong.		The last thing you've ever had Was the last one to know your name So come on and lay down my grave And play with a game that would be played	Dissimilar

No.	Input text	Image	Generated lyrics	Judgment
11	I support you and have vulnerabilities when consuming codeine, recognize approaching storms, she knows my limitations, and I've been in the field.		I'm a bad girl but she never had the chance to say it's over She got me thinking about that, and he was sitting on the phone And now I'm gone let her go Now she's lost her trust again	Dissimilar
12	This song was excluded because the input text contained explicit content.			
13	I can't resist you, you take control, paradise beckons, tonight was amazing.		I'm in love with you You've got to get away from me So come on, come on, come on, come On And show me how we can work it out?	Similar
14	This song was excluded because the input text and the generated lyrics contained explicit content.			
15	I wake up to silence and listen for stories behind me.		I wake up in the morning With all these voices of mine They never seem to get me out of this place before So I'm going down again, so I'll be moving on	Similar
16	I need to finish the album, get hit songs and plaques, collaborate with Nicki, and prove my success despite legal battles and criticism.		I'm in love with the crowd It's like a dream that you'll never see it out loud Now, baby don't be shy of me But I can't deny those things that are gonna get to us out of here	Dissimilar
17	I meant well but things ended badly, now you're bothering my friends and I see through your attention-seeking behavior with someone I despise.		I'm in love with you You've got to do me wrong and right I can't get enough of your life And how could it be, right now	Similar
18	This song was excluded because the input text and the generated lyrics contained explicit content.			
19	Sometimes I drink when lonely but can't rely on you anymore.		I'm tired of being selfish Tired of the same old things It's so hard to get in my way You know your name, you've gotta change yourself again	Dissimilar
20	This song was excluded because the input text contained explicit content.			
21	Let me be your woman and I'll provide overlooked love, grow a family, and offer my feminine touch.		I'm a little girl, You know it's all or nothing But you can't give my love to you I've got your sweet loving feeling for you	Similar
22	I like Gabriela, Patricia, Nicole, Sofia, had crushes on Maria and Thalia, have women from different countries interested in me, and I want to live with them in a mansion, but stop that, boy.		I'm not a lady, She was an angel for the ladies, and me, but she gotta go! And when they ask her how to leave? They say that we should stay in here forever, now...	Similar
23	I don't feel pain, want to experience it?		He's sick The pain in his brain Is a little better than this And the pain is what he needs	Similar

No.	Input text	Image	Generated lyrics	Judgment
24	We got married in a hurricane.		When I first met you She was the man who looked in her eye And said :Son, it's just a little ride?" He'd be gone for good try	Dissimilar
25	Change occurred; haze looms; miss you; I'll assist through setbacks.		The storm is gonna rise and fall You're making me feel brand new A place where we can go I'll be safe until it's gone, yeah	Similar
26	He wants a fancy girl and plans to steal someone else's girlfriend to fill his need for a good girl who can ground him and share his heart.		He's the one for me Who doesn't know that I'm supposed to be, no She can do it like you want it? No matter what she takes, he comes back around	Similar
27	Drinking whiskey doesn't erase memories.		I'm trying to get you back When the lights are shining brighter then your light's gone away You gotta let me know that we're on a fight for our own And if it's not like it, this isn't love but its just another night	Similar
28	Is it too late to pursue, given I could've made a move earlier?		I'm waiting for the world to see Love, love and hate me But if you want this war then let me know We'll get through it again and again	Dissimilar
29	I want to give myself to you, with your pretty eyes, making me dance in bed, because you're exactly what I want.		I'm dreaming of you all my life With only one that can fill me inside And if it's true to your love for me I'll be there by your side and do the rest in peace	Similar
30	This song was excluded because the input text contained explicit content.			
31	You moved on easily and found a new girl, worked on yourself with a therapist, and can now be a better man for her.		She's my wife in town And I'm tired of being around 'Cause I need to know that she's mine is mine But she'll never be found	Similar
32	Feeling numb, questioning the pills, disconnected from friends, overwhelmed by the world and driving in L.A., fearing a mental breakdown.		I'm in the mood for us We're all alone with a new car seat and drive It seems like we have no one to see what it's been done or wrong It's hard to breathe and drive me insane	Similar
33	I'm a night owl, cooking up ambition, don't judge me, say something.		I'm gonna make it You're the cook and your kitchen sink Just to see if you think that I'm in love again Come on baby, come on home for a while?	Similar
34	Postpone fishing with your father due to a busy schedule and reschedule for a later time.		I'm on a mission to get away from the fishing hole And that old boat that wasn't enough for me To be an early morning star That's when you're gone, it's just too late	Similar
35	My low maintenance girl loves Wendy's and wants to dip me in her Frosty.		I'm not a player anymore And you look at me like before, baby I don't need to be bothered by my side But now it's time for the ride	Dissimilar
36	We need alone time after burning both ends to keep the lights on.		He's the one for me When I'm with you, I'm so in love with you The sun goes down and out on my face And it seems like forever we're together again...	Similar

No.	Input text	Image	Generated lyrics	Judgment
37	Time's running out, I'm stepping to you toe-to-toe, and though I should be scared, honey, maybe so, I don't know what you've been told.		I'm not a good man But the best in me He is the best of my life and he's got And that's why they got so mad at me?	Dissimilar
38	I quit my job, fell in love, seeking new drive, due to overwork causing sleeplessness.		I'm working on this paper And I don't know what to say is The things that you say are wrong That's why I stay away from all these games,	Similar
39	I miss you, but I fear telling you.		I've been thinking about you But it was just a matter of time You're always on my mind but still they can't see me crying again... What's wrong with me, don't let go	Similar
40	You danced, looked happy until you saw me, and shed a tear.		I'm gonna be a dancing star Dance in the night away And we'll dance underneath the moonlight On that day - on and on	Similar
41	Spent thousands in Tiffany's, her kids in my house, in trouble with her ex-man in UFC, can't believe it.		I'm gonna buy me a wedding band A lot of people to stand up and jam I'm never gonna get there on that night stand And everybody's doin' what they can do?	Similar
42	Let's escape to a galaxy and ride the rhythm with glitter in our eyes, perfect timing.		I'm gonna be your diamond girl, You're the one in the world of a star And you know that it's not for real though, no But when we try to get back on the way this far?	Similar
43	I'm living proof that I turned something into nothing, staying off the internet, making money, and building something that lasts forever.		I'm working on this paper And listening to my radio We all need some answers for the questions of our lives But that's not what you think that it's worth	Similar
44	Everything is underwater, let's go to the bedroom, ate at Uru's, I'll give it to you hard, be careful with those jeans, I may not see you again, you're a player who beat me, and I can't forget the viral perreo, will you stay tomorrow? No work today, haha.		I'm so sorry that I wrote this letter to ya But what's the use, and it's all good So when you're alone in my room And now we'll be back again	Dissimilar
45	I know what could be, but you never feel the same, and I can't look away.		I'm so sorry for my baby Sorry but it's not the same It feels like a fool to say goodbye But you say it won't make much sense	Dissimilar
46	She sang karaoke after being dared by her friends while I was catching up with the boys under neon lights.		I'm the one you love, let me see ya hands up high tonight And we'll make love for a second chance to get by Come and dance with me if you want it all tonight! Oh yeah, yeah, oh yeah!	Similar
47	Player being chauffeured, two fingers up and one down with toes, showing off assets and enjoying partner's reactions, feeling impatient and ready to speak out about relationship, reminding partner of past experiences and consequences, now playing hide and seek.		I wanna be your lover In my car, and in the backseat of a dream And maybe we can get into this thing together But it's not that bad enough to put me through thick and thin	Similar
48	I'm pushin' P with pointers in the Patek, new hammers, exotic P's, and counting presidents while rocking them.		The man on the moon Has got his own way to get back up And he's got a suit and tie For all the money, they all say's good	Dissimilar
49	On the cusp of his 80th birthday, while rocking on his back porch and sipping coffee, he shared his wisdom with me about making a dollar count.		Old man sit down with his old friend And watch the world pass by, and I know that you're in He's got a lot for me to do but he don't want to be free So when that little boy comes up on TV	Similar

No.	Input text	Image	Generated lyrics	Judgment
50	I'm tired of you guys, you're inconsistent; I'm ordinary and sad when you're near, use me up like corduroy, let's resolve our issues and keep our relationship smooth.		The man I've been trying to make sense of it all?, To the people in this game and they're not worth fighting with And you don't know what to tell me is that we're living for! But if you really want it or leave it just as well... that's okay;	Similar
51	Alone at last, almost left, everyone's dancing, he's not with you.		You're all I need To feel you in my arms The one that's on, the other It's been a long, long time ago	Similar
52	Despite her perfection, I still long for you because being perfect doesn't guarantee success in a relationship.		You're a man in the middle ... Of his life And you'll understand, when he's not by me I'm a man in my dreams and there is no other man tonight But it seems so hard to understand that everything's changed	Similar
53	Beneath the surface, I'm unstable, uncertain, and inadequate.		I'm drowning in your own shallow grave But you're not the first time that you'll be ok, yeah You're so afraid of me and you will see The water's on my mind is running away from you	Similar
54	You moved to South Carolina as planned and left without incident.		I'm home in the couch And my house on fire - and you're gone There's room for your brother's home We'll find a place where it's at, alone	Dissimilar
55	I am deeply in love with you and cannot live without you.		And I will be there, Be my friend and I will be there for you to see me again Oh this is how it ends with a broken heart? You're the only thing that can take away your sorrow	Similar
56	I'm the baddest alive with a killer body, samurai mind, and can't be compared to others.		I'm a fighter but he's not the same as mine He'll fight for something better, cause his mind is mine And if you don't like it or leave it to me like this? Because I will never be your savior at all!	Similar
57	Talking, eating, empowering, and storming together for hours, ending with a shower.		I'm a poor boy and a poor boy With the boys of blue, yeah we're all in our heads They say that they love him well And it's not too much about you and me	Dissimilar
58	Asked where I'm from, told her a small town near Knoxville, we held hands and waded into blue water, she left her flip-flops by my Red Wings on the beach, trying to talk with my accent.		I'm on the beach with you And my friends are all around If we could only make a wish come true But if it's not too late to be blue	Similar
59	Don't call me, my number has changed, call 1-800-screw-you.		I'm the one, and all my girls in a row And it's not like you boys, but they don't know yet If ya gotta let 'em know what to do So get your party started, cause that's how its goin' down	Dissimilar
60	I'm a body catcher, driving a Raptor, with a powerful gang behind me.		I'm gonna be a good man When he's coming home from the hood, it's my turn to wood and burn And when his big truck is full of dust Up in the sky like an eagle that we gotta get down	Dissimilar
61	I need coffee and whiskey doing chores, saving money for family.		I'm in the mood for coffee Up to the table, up on the counter There's no room for breakfast And there's a place where she'd rather be	Similar

No.	Input text	Image	Generated lyrics	Judgment
63	Dad, we get lost, park and light up, drink something for the dryness, play reggaeton and go wherever we can love and eat.		I'm in the club at a party With some stupid shit on his mind I'll be gone to hell with it or not And get me high and drive all day long	Similar
64	I said I may not need you in the morning, but I need you now and I'll give you all you need because I know what you like.		I'm not so sure what you mean to me You take a look at my face, and see the light of day Until this life is over again And in your heart it just takes more than words can say	Similar
65	All I want for Christmas is not gifts or toys, but just one thing.		I'm so happy, With a little gift to me The gifts that you give and the present danger in your hand And happiness is sweet for Christmas	Similar
66	Things change, not everything works out.		It's not the same, as it isn't right No need for help but to keep me from getting light up And I'm looking up ahead and find myself in my mind But I'm just a simple man on the side	Dissimilar
67	Good whiskey, riding roads, music, fires, swings - all good, but not for me.		I'm sitting on the porch with you On my horse and ride out to me You are my destiny and what's meant to be The wild wind is blowing up in your tree?	Dissimilar
68	You want to party, dance, be like Batman, wear designer clothes, and forget the past, while making someone fall in love with your body.		She's a wild cat, And she knows it when the sun comes up There ain't nothin' wrong about you baby But I don't know how to act	Dissimilar
69	Your kitten got lost due to negligence, tonight there will be turbulence in bed, I'll give you the permanence, and I have a license to give you that totito, and Carola doesn't walk alone.		I'm in love with you You've got to stop me now Baby don't leave me here alone baby Please don't get away from home	Similar
70	Things aren't the same, we need to fix them.		In the house, I have found Where you are at last? Well there was no one else to blame It's been a long time coming	Dissimilar
71	During an interview, someone asked about my childhood, schooling, and alternative career plans, to which I replied I would be surviving with a low-income job, an old car, and relying on tips, music, and a barstool.		I'm sitting here trying to get my job done But it ain't easy but nothing's changed Nothing seems to matter anyway So I'll be back in the kitchen and stay strong	Similar
72	Limited time, but I'll prioritize you to express my love, though scared to let you in.		I'm going to the next door, And when you're not alone, When there's nowhere else left behind me, There's nothing more here for me to do; now...	Dissimilar
73	I need someone to hold me and tell me how to play it since I've been feeling lonely and jaded, and it's been so long since you've been gone.		I'm not afraid to ask You'll never know what you've got until your heart is broken Or maybe we can make this through Maybe it's just a little late and I will be there for you	Similar
74	Meet me at our spot when I'm stronger and can stay up longer because I'm not getting any younger and I currently can't even stay up when I wake up.		I'm going to be where you are You're making me feel just like a stepping man But I'll never let it go And we can make it through the trees	Dissimilar
75	You showed hospitality in various ways.		There's a light in the city Where there's no place to hide The silver spoon's in the evening And there's still some food for my life	Dissimilar

No.	Input text	Image	Generated lyrics	Judgment
76	I walked in with you, it was cold, but it felt like home, left my scarf at your sister's, and you still have it.		I'm just a little bit of that Just like the way it's supposed to be Like my house, you'll never know And we'd go out and play in your game	Dissimilar
77	This song was excluded because the input text contained explicit content.			
78	Do you want what I want?		I'm a good wife She put her hand down on me And if it's not like you do or say that she needs me So when the music's loud	Similar
79	Leave now.		And I'm a man on my way He'll get there, he's coming after us all!... The sun's gonna set me free!- A yellow bird flyin' in his eye for an eye	Dissimilar
80	Christmas party hopping, couples stopping, mistletoe showing, rockin' around the tree, pumpkin pie and caroling.		When we were young they used to be We loved ones and then, but now we're old The world was so small And when we were younger I'd never seen	Dissimilar
81	Met her at Aldean's; she saw me walkin' in and I'm too drunk and crazy for her liking, but I don't mind, 'cause girls like her just wanna take me around.		I'm in the country And a honky tonk band But it ain't gonna stop 'til dawn Oh and you'll be gone home	Dissimilar
82	I'm eager to have you in my life despite what others may think.		I'm a prisoner without you And the love that we share There's nothing to say or do With all the things that I have done	Dissimilar
83	I faced struggles and hardships, but I persevered and became a king, and now I am focused on my own success and wellbeing.		I'm a pimp Come on, come on, come on You know that you're the king of kings Now listen to me now...	Similar
84	This song was excluded because the input text contained explicit content.			
85	You got me hooked, I'm a lifelong fan, girl.		You're my angel of the devil And now you've got all the strength I want But don't let it go It just gets to work and then all your lovin' is all over	Similar
86	The jingle hop begins with jingle bell rock, as snow falls and jingle bells swing and ring.		Jingle Bells! Oh what fun a one is for? In a open sleigh - with you, oh yeah we're all dressed up for gold! Oh what fun comes on the run and hide from me	Similar
87	Listening to my heart for a long time, I spend days and months thinking about your scent, but now it's time to use my head before it's too late and I break apart unintentionally.		I'm in love with you You've got to let me go so far So many things that I say are gonna die, goodbye So I can be your sorrow and wake up soon as the morning sun goes down	Similar
88	It ain't easy, so don't believe those who say it is.		Gonna tell you this, gon Gonna make it through your day You know I'm gonna stay right here all day And we're gonna get there, someday	Dissimilar

No.	Input text	Image	Generated lyrics	Judgment
89	Enjoy Christmas cheer and a cup of joy, even without snow.		I'm dreaming of Christmas The feeling's gone away On the night, on Christmas Eve And we're going out... In the middle of December	Similar
90	I need your lips on mine despite our hugs, cuddles, and lovemaking before saying goodnight.		I'm tired of the night Of all the things you said to me When I close my eyes, baby And we know what was meant for me	Similar
91	She likes when I wear a suit, pick her favorite movie, open up, listen, get groceries with flowers, and give her a 30-minute back rub.		I'm just a man that can make you mine And all the time and time again, we'll be fine together You may never know me like this forever In my mind there will always be a better way	Dissimilar
92	I warned everyone that she's fine but he's not worth it and we can't handle the drama.		I'm the man that's been And you know that it's not that way again So don't act surprised and call me back It ain't nothing but a ball anyway	Dissimilar
93	Her favorite song was sung every time it played, and he will always remember her baby blue eyes.		Baby, baby I'll be alright If your heart is strong enough to let me down Do n't worry 'bout it later?	Similar
94	Desiring the girl with a small waist, perfect smile, out every weekday in her dad's car, while being told not to stress out, but fearing an ugly scar.		I'm the type of guy, you wanna be a star from behind And all your friends come and go for some time to go But when we're riding on this road So tell me what's going on inside is that far away	Dissimilar
95	This may be your final experience with a stranger at the bar, dancing in unfamiliar arms, having a first kiss, and being alone under neon lights.		I'm in the club at midnight And you're still here waiting on me In the back of my mind But now that we've gone too far, so far away	Similar
96	She's exhausted from crying all night on this beautiful day and I can feel the strain.		I'm so tired of being tired with you And it's the same old thing that we've done So many days when no one else could do this Without a sound to stay up all night till the day I die	Similar
97	Come for the zoov, pull up, set the mood, you like sunshine, I'm the moon, fine baby, might give her the wood.		I'm gonna show you the light, And if it's all right! You can have a drink but your throat won't be long, To get me to know where we've been going?	Dissimilar
98	Lucky girl married a dirty boy who is the talk of the town due to his questionable behavior.		She's the one for me and my wife's, I'd like to be down with her, But if you wanna make it clear, come inside, And when she'll get inside of her life, oh, so let's go... Oh baby...	Similar
99	We keep meeting repeatedly, switching places, and doing the same things.		You're not the one we've got And there's no one to fill our pockets I can't see why you got me going So I'm asking why do you want it?	Dissimilar
100	Trusted a Montero with broken AC, bad demos on CD, went to TN, got new apt with deposits, heard no door slam, grateful for optimism.		I'm driving into a pickup truck With the windows down and there's nothing left to fear It's just my luck on you , it's up to get here In the back of your head	Dissimilar