BEBOPNET: DEEP NEURAL MODELS FOR PERSONALIZED JAZZ IMPROVISATIONS - SUPPLEMENTARY MATERIAL

1. SUPPLEMENTARY MUSIC SAMPLES

We provide a variety of MP3 files of generated solos in: `https://shunithaviv.github.io/bebopnet`

Each sample starts with the melody of the jazz standard, followed by an improvisation whose duration is one chorus. Sections `BebopNet in sample` and `BebopNet out of sample` contain solos of BebopNet without beam search over chord progressions in and out of the imitation training set, respectively. Section `Diversity` contains multiple solos over the same standard to demonstrate the diversity of the model for user-4. Section `Personalized Improvisations` contain solos following the entire personalization pipeline for the four different users. Section `Harmony Guided Improvisations` contain solos generated with a harmonic coherence score instead of the user preference score, as described in Section 3.2. Section `Pop songs` contains solos over the popular non-jazz song. Some of our favorite improvisations by BebopNet are presented in the first section, `Our Favorite Jazz Improvisations`.

2. METHODS

2.1 Dataset Details

A list of the solos included in our dataset is included in section 4.

2.2 Musical Preference Labeling System

A figure of our CRDI variant is presented in Figure 1 [1].

2.3 beam search

A pseudo code of the beam search ψ procedure is presented in Algorithm 1.

2.3.1 Beam Search - Complexity Analysis

In terms of time complexity, for every time step, we forward the b sequences of length t through the two networks f_θ and g_ϕ. A naïve implementation would amount to $\mathcal{O}(b \cdot t^2)$ time complexity and $\mathcal{O}(b \cdot t)$ space complexity. Using simple bookkeeping, passing the entire sequences

[1] Image credit: `https://github.com/Andrew-Shay/python-gauge`

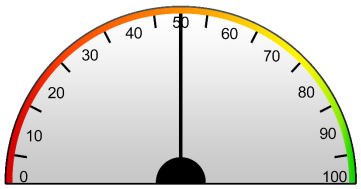


Figure 1. Digital CRDI controlled by a user to provide continuous preference feedback.

Algorithm 1: Score-based beam search ψ

Input: jazz model f_θ, score model g_ϕ, batch size b, beam size k, update interval δ, input sequence $X_\tau^{in} = x_1 \cdots x_\tau \in \mathcal{X}^\tau$

Output: sequence $X_{\tau+T} = x_1 \cdots x_{\tau+T} \in \mathcal{X}^{\tau+T}$

$V_b = [\underbrace{X_\tau^{in}, X_\tau^{in}, ..., X_\tau^{in}}_{b \text{ times}}] \in \mathcal{X}^{\tau \times b}$;

$scores = [\underbrace{-1, -1, ..., -1}_{b \text{ times}}] \in \mathcal{R}^b$

for *step* t *in* $\tau, \tau+1, ..., \tau+T$ **do**
  for *sequence* X_t^i *in* V_b **do**
    $Pr(s_{t+1}|X_t^i, c_{t+1}^i) = f_\theta(X_t^i, c_{t+1}^i)$;
    $s_{t+1}^i \sim Pr(s_{t+1}|X_t^i, c_{t+1}^i)$;
    $x_{t+1}^i = (s_{t+1}^i, c_{t+1}^i)$;
    $X_{t+1}^i = x_1^i \cdots x_{t+1}^i$;
    $scores[i] = g_\phi(X_{t+1}^i)$
  end
  $V_b = [X_{t+1}^1, X_{t+1}^2, ..., X_{t+1}^b] \in \mathcal{X}^{(t+1)\times b}$;
  if $(t-\tau) \mod \delta = 0$ **then**
    $topk\_inds = \underset{i}{\text{k-argmax}}\ scores$;
    for i *in* $1, 2, ..., b$ **do**
      $V_b[i] = V_b[topk\_inds[i \mod k]]$
    end
  end
end
$X_{\tau+T} = \underset{X}{argmax}\ score(V_b)$

through the networks can be avoided, thus reducing time complexity to $\mathcal{O}(b \cdot t)$ as well. We note that in modern frameworks, it is natural to efficiently implement the multiple forwards through the network in parallel as one would forward a batch.

3. EXPERIMENTS

3.1 Hyper-parameter search

Hyper-parameters for both models were selected by performing a manual coarse-to-fine search. Table 1 displays considered and chosen hyper-parameters for f_θ. For user preference metric learning, we chose hyper-parameters using five-fold cross-validation over the training set. The five models used for cross-validation were later combined as an ensemble model. We show the considered hyper-parameters in Table 2. Table 3 presents the hyper-parameters considered for the beam search.

3.2 Harmonic Guided Generation

An alternate known generative approach to the one we propose in our paper is to maximize a predefined reward function based on music theory, see, e.g., [1, 2], rather than a user-specific metric. This approach, similar to "reward hacking" common in RL [3], may lead to undesired results. To examine a simple baseline using this method, we generated samples from BebopNet that are optimized to play notes within the harmony. We then used the harmony coherence metric (for scales), as discussed in Section 6 in our paper, and applied beam-search with it. The resulting optimized solos successfully maximized this harmonic coherence metric. One can listen to the generated solos that appear in the supplementary music samples. Perhaps unsurprisingly, the use of this handcrafted metric resulted in a degraded performance where the solos were biased to prefer repeating notes that match the chord.

3.3 Per-User Personalization

3.3.1 Elicitation Process

We applied our proposed pipeline on four users, all of whom are amateur jazz musicians. Each of the users has a few years of experience in jazz improvisation, however, music is not their main profession. For each user, the elicitation process took place in one session of 5 hours in front of a desktop. The users used the computer keyboard arrows to change the CRDI meter while they listened to the improvisations with headphones. Before playing each improvisation, the name of the standard over which the improvisation is played is shown. The user may choose to play the melody of the standard before listening to the improvisation to familiarize themselves with the standard.

3.3.2 Results

Below we present the analysis for all users. Figures 2, 3, 4, 5, present the histograms of predictions over sequences from the validation set for all users. Table 4 presents the thresholds selected for selective prediction for each user. Different users indeed exhibit different taste. One such contrast is the first-order statistics of users 1 and 2. While user-1 labeled a large proportion of the data as negative, user-2 labeled most of it as positive. In contrast to the two above, user-3 has a high level of neutral sequences, which may indicate uncertainty in his preference. In Figure 6 we can see a similar behavior in all the users' models g_ϕ: the beam size increases the score obtains grows up to an optimal point. A noticeable improvement of the user preference score is achieved for all the users, as we compare the initial score for BebopNet (when $beam_width = 1_1$) to the top score achieved with beam search and the preference model.

3.4 Plagiarism Analysis

As described in Plagiarism section, we present here the plagiarism analysis results. Table 3.4 presents the average longest sub-sequence between any two artists. The diagonal of this table represents "self-plagiarism". Figure 7 displays the percent of identical sequences in length n per artist.

Hyper-parameter	Lowest considered	Top considered	Chosen
Number of layers	2	4	3
Learning rate	$1e^{-3}$	5	$5e^{-1}$
Weight decay	$1e^{-7}$	$1e^{-2}$	$1e^{-6}$
Dropout	0	0.8	0
Number of epochs	100	600	500
Batch size	32	512	256
Sequence Length	8	150	100

Table 1. Hyper-parameter search: considered range and chosen values for note prediction

Hyper-parameter	Lowest considered	Top considered	Chosen
Pitch embedding size	64	1024	256
Duration embedding size	64	1024	256
Hidden size	128	2048	512
Number of layers	1	4	3
Learning rate	$1e^{-2}$	5	$1e^{-1}$
Weight decay	$1e^{-7}$	$1e^{-2}$	$1e^{-6}$
Dropout	0.4	0.8	0.9
Number of epochs	50	200	100
Batch size	32	64	32
Sequence Length	8	32	16

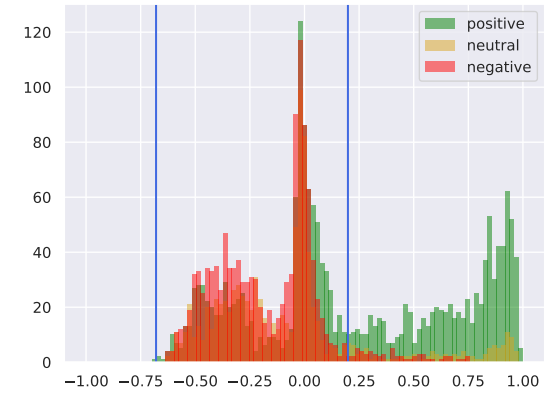
Table 2. Hyper-parameter search: considered range and chosen values for user preference metric learning

Hyper-parameter	Lowest considered	Top considered	Chosen
Beam width	2	500	32
k	2	100	8
Beam depth	1 note	4 measures	2 measures

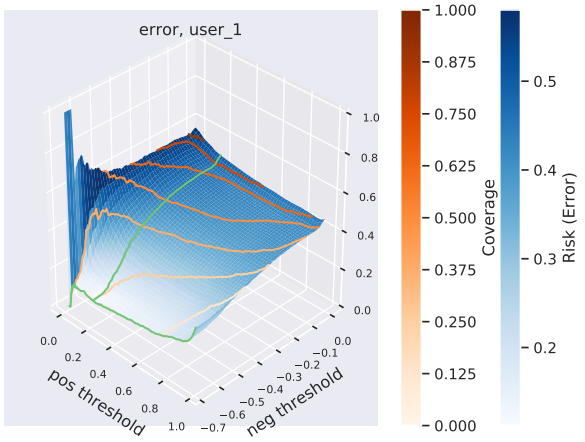
Table 3. Hyper-parameter search: considered range and chosen values for the beam search

User	β_1	β_2
1	-0.679	0.198
2	-0.999	0.128
3	-0.515	0.086
4	-0.865	0.158

Table 4. β_1, β_2 for every user. β_1, β_2 are defined to be the thresholds that yield minimum error on the contour of 25% coverage.

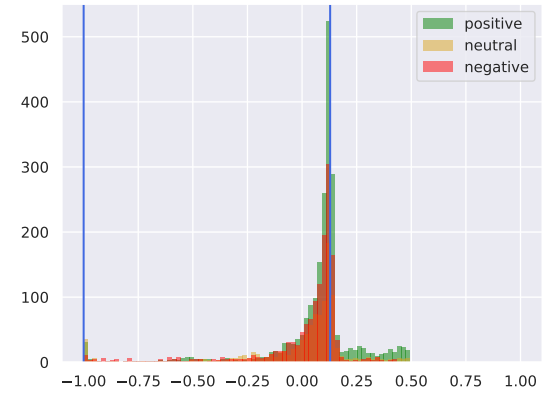


i Histogram of predictions - user 1

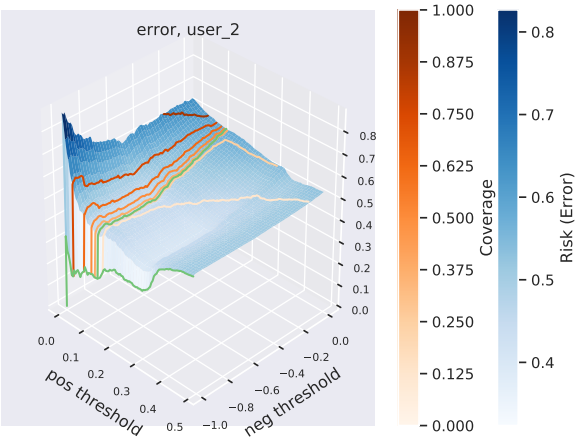


ii Risk-coverage plot - user 1

Figure 2. User 1: 2i Predictions of the preference model on sequences from a validation set. Green: sequences labeled with a positive score ($y_\tau > 0$); yellow: neutral ($y_\tau = 0$); red: negative ($y_\tau < 0$). Blue vertical line indicates thresholds β_1, β_2 used for selective prediction. 2ii Risk-coverage plot for the predictions of the preference model. β_1, β_2 (green lines) are defined to be the thresholds that yield minimum error on the contour of 25% coverage.

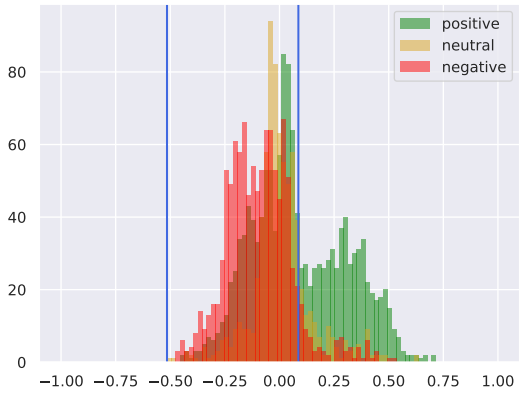


i Histogram of predictions - user 2

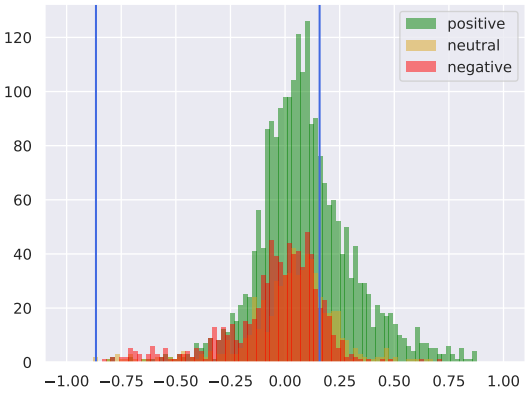


ii Risk-coverage plot - user 2

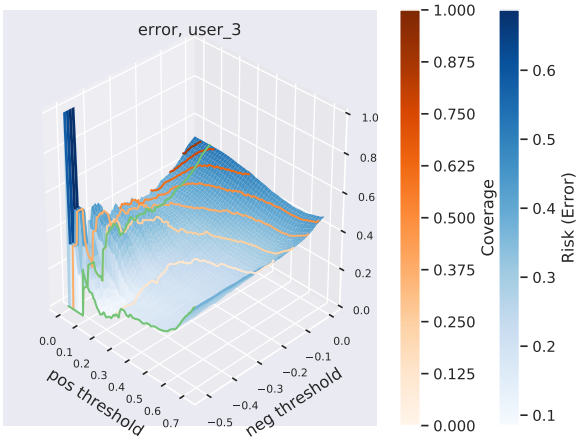
Figure 3. User 2: 3i Predictions of the preference model on sequences from a validation set. Green: sequences labeled with a positive score ($y_\tau > 0$); yellow: neutral ($y_\tau = 0$); red: negative ($y_\tau < 0$). Blue vertical line indicates thresholds β_1, β_2 used for selective prediction. 3ii Risk-coverage plot for the predictions of the preference model. β_1, β_2 (green lines) are defined to be the thresholds that yield minimum error on the contour of 25% coverage.



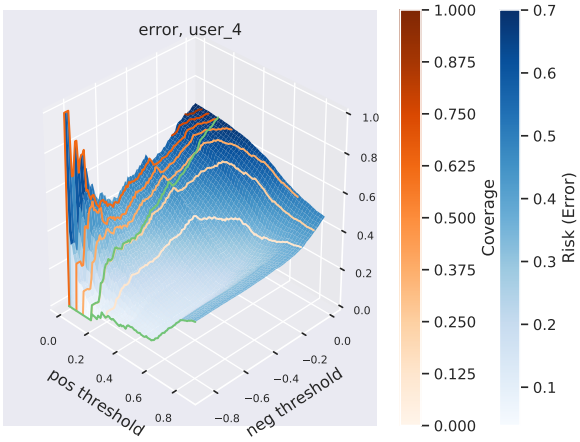
i Histogram of predictions - user 3



i Histogram of predictions - user 4



ii Risk-coverage plot - user 3



ii Risk-coverage plot - user 4

Figure 4. User 3: 4i Predictions of the preference model on sequences from a validation set. Green: sequences labeled with a positive score ($y_\tau > 0$); yellow: neutral ($y_\tau = 0$); red: negative ($y_\tau < 0$). Blue vertical line indicates thresholds β_1, β_2 used for selective prediction. 4ii Risk-coverage plot for the predictions of the preference model. β_1, β_2 (green lines) are defined to be the thresholds that yield minimum error on the contour of 25% coverage.

Figure 5. User 4: 5i Predictions of the preference model on sequences from a validation set. Green: sequences labeled with a positive score ($y_\tau > 0$); yellow: neutral ($y_\tau = 0$); red: negative ($y_\tau < 0$). Blue vertical line indicates thresholds β_1, β_2 used for selective prediction. 5ii Risk-coverage plot for the predictions of the preference model. β_1, β_2 (green lines) are defined to be the thresholds that yield minimum error on the contour of 25% coverage.

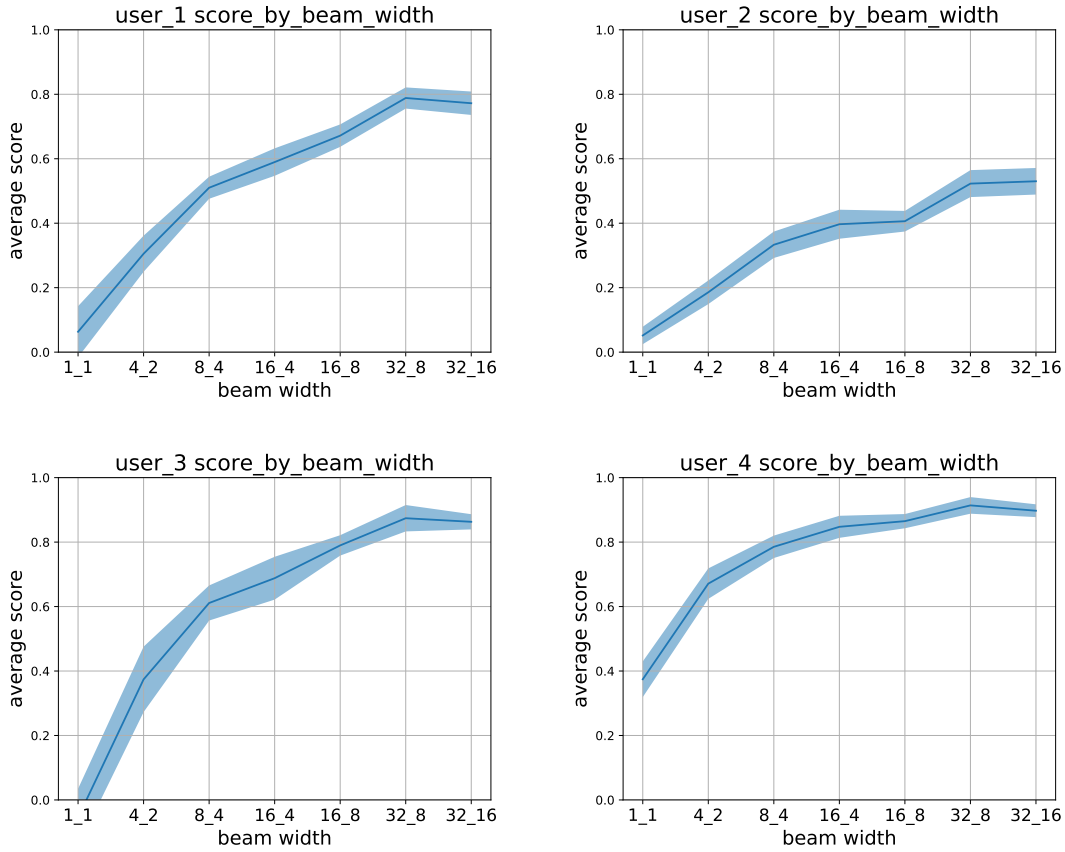


Figure 6. User Score vs. Beam Width: As we increase the width of the beam, we get a higher score for generated solos using the user preference model. x-axis - b_k combinations of beam width b and parameter k used. Shaded area represents the 95% percentile of the confidence interval. Notice the initial point of beam width 1_1 representing the score for improvisations generated by BebopNet without personalization.

Name	Adderley	Gordon	Getz	Parker	Rollins	Stitt	Woods	Ammons	Mean	Ours
Adderley	4	6	6	4.7	5.7	4.5	5	4.5	5	6.2
Gordon	3.4	6.4	5.1	4.2	4.6	3.8	3.5	4.2	4.4	4.6
Getz	3.3	4.6	5.7	4.4	4.2	3.8	3.5	4.2	4.2	4
Parker	3.7	5	5.1	6	5.1	4.1	3.6	5	4.7	4.3
Rollins	3.6	4.9	4.6	4.4	4.7	3.8	3.5	4.2	4.2	4.1
Stitt	4	7	7.2	5.6	5	10.3	4.1	5.6	6.1	4.7
Woods	4.1	5	5.8	4.8	5.4	4.4	5.4	5.1	5	3.8
Ammons	3.3	4.8	4.8	3.9	4.3	4	3.6	5.3	4.2	3.9
Mean	3.7	5.5	5.5	4.7	4.9	4.8	4	4.8	-	4.4
Ours	2.7	3.9	3.8	3	3.4	2.8	2.8	3.6	3.3	3.8

Table 5. Plagiarism among 8 jazz saxophone giants. Element $x_{a,b}$ in the table is the average largest sub-sequence in a solo of artist a (row names) found in any solo of artist b (column names).

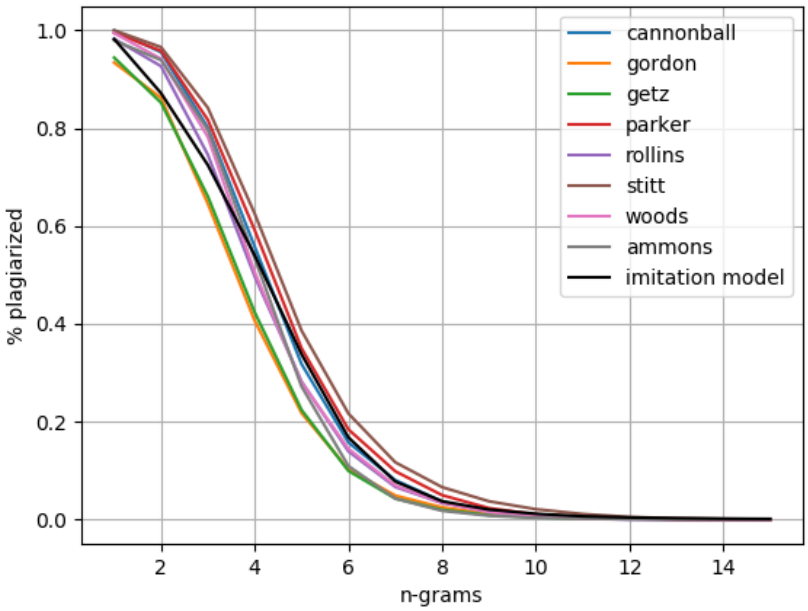


Figure 7. Percent of common phrases of length n-gram length. Our jazz model is in black (imitation model).

4. JAZZ DATASET (XML FILES)

2 Autumn Leaves Sonny Stitt Good Life
003 Tenor Madness Coltrane Rollins Prestige
004 Serpents Tooth Take 1 Rollins and Bird
5 Serpents Tooth Rollins Bird Take 2
9 Autumn Leaves Stitt Ammons Boss Tenors
12 Scrapple from the Apple Dexter Gordon Our Man in Paris
15 Just Friends Bird with Strings
38 Summertime Stitt A Jazz Message
40 Ive Got Rhythm Stitt Tune up
073 P208-209 GIRL FROM IMPANEMA GETZ
85 My Man Benny Woods
115 Blue Seven Sonny Rollins
126 I Remember You Charlie Parker Verve
134 God Bless The Child Rollins
150 Four Rollins Live
156 Cheese Cake Dexter Gordon Go
162 I Want More Dexter Gordon
163 For Regulars Only Alt Dexter Gordon
164 Airegin Sonny Rollins
173 I Cant Give You Anything But Love Stitt
174 Soon Cannonball
212 Webb City Sonny Stitt Constellation
218 Embraceable You Phil Woods Cool Woods
219 Yesterdays Phil Woods Just Friends
224 Out of Nowhere Stan Getz Roost
228 Jumpin the Blues Charlie Parker J McShann
239 Pennies From Heaven Stan Getz Roost
242 St Thomas Sonny Rollins
255 Ornithology Charlie Parker Roost Live
267 Im Forever Blowing Bubbles Charlie Parker J McShann
285 Cherokee Charlie Parker Trio
288 My Heart Tells Me Charlie Parker
295 Walkin Phil Woods This is How I Feel About Jazz
299 Indian Summer Phil Woods The NY Scene
300 Groovin High Charlie Parker
311 Things Are Getting Better Cannonball Adderley
348 Im A Fool To Want You Dexter Gordon Blue Note
361 Moritat Sonny Rollins Saxophone Collossus
381 Heres That Rainy Day Stan Getz for Lovers
382 Cry Me A River Dexter Gordon Blows Hot and Cool
391 On a Slow Boat To China Stan Getz Soul Eyes
394 Line For Lyons Stan Getz Chet Baker Live in Sweden part1
394 Line For Lyons Stan Getz Chet Baker Live in Sweden part2
395 Ernies Tune Dexter Gordon Blue Note
404 Daddy Plays The Horn Dexter Gordon
408 Everybodys Somebodys Fool Dexter Gordon Blue Note
424 Dont Explain Dexter Gordon A Swingin Affair
428 This Cant Be Love Stan Getz in HiFi
429 There Will Never Be Another You Sonny Sitt Roost
430 Ratio Sonny Stitt In The Beginning
453 Ornithology Sonny Stitt Stitt play Bird
458 As Time Goes By Dexter Gordon Round Midnight
469 Our Love is Here to Stay Phil Woods Jazz For The Carraige Trade
480 April in Paris Charlie Parker with Strings
529 Sunshower Stan Getz Ballads n Bossas The Lost Sessions
534 E Luxo So Stan Getz Jazz Samba
536 Hush a Bye Stan Getz Soul Eyes

551 O Grande Amor Stan Getz Sweet Rain
557 Manha de Carnaval Getz Big Band Bossa Nova
560 Stans Blues Getz Gilberto 2
594 Billies Bounce Charlie Parker Take 5
622 Nows The Time Take 3 Bird Savoy
625 Tanya Dexter Gordon 1 Flight Up
627 Nows The Time Take 4 Bird Savoy
638 So Danco Samba Stan Getz w Gilberto
643 Clear Cut Boogie Rollins Global Warming
644 I remember You Gentle Jug Gene Ammons
659 Star Eyes Dexter Art of the Ballad
670 Vivo Sohando Stan Getz Gilberto
679 Im Just Waiting on A Friend Sonny Rollins Stones Tattoo You
690 WNEW Stan Getz and Bill Evans
712 Laura Charlie Parker With Strings
722 Nobody Else But Me Stan Getz Plays
738 Hanky Panky Dexter Gordon Blue Note
741 Doralice Stan Getz Gilberto
763 Corcovado Cannonball Adderleys Bossa Nova
766 Moonlight In Vermont Stan Getz for Lovers
787 I Know That You Know Rollins Sonny Side Up
793 Salvador Sonny Rollins This is What I Do
797 Blue Room Sonny Rollins Rogers Hart Songbook
819 Walkin Bass Phil Woods plays Henry Mancini
820 On The Sunny Side of the Street Sonny Stitt Sunny Side Up
826 Three Oclock on the Morning Dexter Gordon Go
836 Voce e Eu Stan Getz Gilberto 2
840 Corcovado Stan Getz w Guest Laurindo Almeida
852 Everything Happens to Me Charlie Parker with Strings
861 Exactly Like You Stan Getz Ballads
867 Have Yourself a Merry Christmas Dexter Gordon
871 Counter Clockwise Gene Ammons Boss Tenors
871 Counter Clockwise Stitt Jug Boss Tenors
914 Love Jumped Out Stan Getz Recorded Fall 61 - Tenor Sax
935 Summertime Stan Getz The Definative
953 Moose The Mooch Charlie Parker
982 Anthropology Charlie Parker
988 Dewey Square Charlie Parker
1006 Boston Bernie Dexter Gordon Long Tall Dexter
1019 Meditation Dexter Gordon The Art of the Ballad
1039 Girl from Ipanema Getz Live TV Show
1052 You Talk the Talk Gene Ammons Greatest Hits of 70s
1054 Outra Vez Stan Getz 1984 w guest artist Laurindo Almeida
1059 Of Thee I Sing Stan Getz West Coast Jazz 1955
1065 Blues For Alice Charlie Parker
1070 KC Blues Charlie Parker
1078 On a Slow Boat to China Getz Last Recording
1129 Manha De Carneval Dexter Gordon Gettin Around
1132 Summertime Charlie Parker With Strings
1137 Satin Doll Gene Ammons Organ Combos
1144 Jordu Stan Getz Jazz Masters 8
1152 The Christmas Song Dexter Gordon The Panther
1164 Our Love is Here to Stay Dexter Gordon Blue Note
1167 Red Top Gene Ammon Johnny Coles Savoy
1171 Dr Wu Phil Woods Katy Lied
1182 Flick of a Trick Dexter Gordon Gettin Around
1184 I Want to be Happy Stan Getz w Oscar Peterson
1186 Kateas Dance Gene Ammons Legends of Acid Jazz

1193 But Not For Me Stan Getz Quintessence V1
1194 One Note Samba Stan Getz au Go Go
1197 Samba Triste Stan Getz Rio For Lovers
1202 Fuzzy Gene Ammons Savoy Sessions
1212 As Time Goes By Dexter Gordon Manhattan Symphony
1260 Para Machucar meau Coracao Stan Getz Gilberto
1279 Wave Stan Getz YouTube
1322 Winter Moon Stan Getz Girl From Ipanema 89
1324 Love for Sale Dexter Gordon Go
1336 2nd Balcony Jump Dexter Gordon Go
1351 Broadway Dexter Gordon Our Man in Paris
1396 Soy Califa Dexter Gordon Swinin Affair
1405 You Stepped Out Of A Dream Dexter Swingin Affair
1419 The Backbone Dexter Gordon A Swinin Affair
1429 Until The Real Thing Comes Along Dexter Gordon A Swingin Affair
1433 McSplivens Dexter Gordon A Swingin Affair
1437 Who Can I Turn To Dexter Gordon Gettin Around
1441 Heartaches Dexter Gordon Gettin Around
1446 Shiny Stockings Dexter Gordon Gettin Around
1451 Le Coiffeur Dexter Gordon Gettin Around
1454 Very Saxily Yours Dexter Gordon Gettin Around
1488 With a Song in My Heart Sonny Rollins Young Rollins
1495 Menina Moca Stan Getz Bossa Nova Years
1516 Early Autumn Stan Victor W Herman 56 - Tenor Sax
1542 Love For Sale Charlie Parker Plays Standards
1548 Stanley The Steamer Dexter Gordon Tower of Power
1553 East of the Sun Stan Getz wtih European Friends
1555 Tinys Tempo Charlie Parker Take 3
1558 Tinys Tempo Charlie Parker Take 1
1562 Tinys Tempo Charlie Parker Take 2
1573 Lady Bird Stan Getz with European Friends
1581 Stans Blues Stan Getz Anniversary
1605 Doxy Sonny Rolins Bags Groove
1623 In Your Own Sweet Way Phil Woods Warm Woods
1637 Hershey Bar Stan Getz When the World Was Young
1649 Youd Be So Nice to Come Home To Stan Getz Yours and Mine
1673 O Grand Amor Stan Getz For Lovers
1687 How Insensitive Stan Getz Compact Jazz
1837 Society Red Dexter Gordon Doin Allright
1949 Four Sonny Stitt No Greater Love
2269 Ineta Gene Ammons Red Top
2553 Wee Dot Gene Ammons Leo Parker LP 1947-1950 Gene
A Night In Tunisa MCA Bird
A Nightingale Sang in Berkeley SQ Dexter Gordon Gotham City
After Hours Sonny Rollins Sonny Stitt Sonny Side Up - Rollins
All The Things You Are Bird Massey Hall
Anna Gene Ammons Bossa Nova
Anything Goes Stan Getz Mulligan Meets in HiFi Getz
As I Live and Bop Stan Getz Complete Studio Sessions
Autumn In NY Dexter Gordon Daddy Plays the Horn
Autumn Leaves Stan Getz Best of the Roost Years
Autumn Leaves Stan Getz & Kenny Barron
Bikini Dexter Gordon 1943-1947
Blow Mr Dexter Dexter Gordon 1943-1947
Blowin in the Wind Stan Getz
Blowing Reds Top Gene Ammons 1947-1949
Blue Bossa Dexter Gordon Biting the Apple
Blue Monk Dexter Gordon Live at Montreaux

Blue n Boogie Bird Benedetti d1t1
Blues for Bags Sonny Stitt Only the Blues
Bluing Sonny Rollins Complete Prestige
But Not For Me Gene Ammons Soul Summit
Bye Bye Blackbird Gene Ammons God Bless Jug & Sonny
Bye Bye Blackbird Sonny Stitt Gene Ammons God Bless Jug Sonny
Canadian Sunset Gene Ammons Boss Tenor
Chromatic Aberration Dexter Gordon 43-47
Close Enough For Love Stan Getz The Dolphin
Compulsion Charlie Parker Collectors Item
Compulsion Charlie Parker Sonny Rollins Collectors Item
Concentration Gene Ammons 1947-49
Conception Sonny Rollins Dig
Confirmation Dexter Gordon Daddy Plays the Horn
Cool Cool Daddy Gene Ammons Etta Jones Lonely and Blue
Corcovado Stan Getz Compact Jazz
Crazeology Charlie Parker Take 4 12.17.1947
Crazy Chords Stan Getz 2-fer
Crazy Mary Gene Ammons Free Again
Dancing in the Dark Charlie Parker with Strings
Denial Sonny Rollins Dig
Detour Ahead Stan Getz for Lovers
Dexters Minor Mad Dexter Gordon 1943-1947
Diaper Pin Stan Getz Complete Studio Sessions
Dig Sonny Rollins Jackie McClean Dig - Tenor Sax.
Do What You Do, Do Stan Getz Bossa Nova Years
EAAK Blues Gene Ammons 47-49
Early Autumn Stan Getz 3 Herds 1948
Feijoada Stan Getz Stuttgart 1989
Fools Rush In Stan Getz 1952-1953
For You Sonny Stitt Night Letter
Ginza Samba Stan Getz with Cal Tjader
Going for the Okey Doak Gene Ammons 47-49
Groovin High Charlie Parker Radio 3.23.53 Milt Buckner Trio
Groovy Sambas Cannonball Adderley Bossa Nova
Hairy Sonny Stitt Night Letters
How Deep is the Ocean Stan Getz 1952-1953
I Was Doing Alright Dexter Gordon Doin Alright
Idaho Gene Ammons 47-49
In a Sentimental Mood Sonny Rollins with the MJQ
Indian Summer Stan Getz Quartets
Interlude in Bebop Stan Getz Complete Studio Sessions
It’s Only a Paper Moon Sonny Rollins Complete Prestige Sessions
Its Allright With Me Sonny Rollins Workout
Ive Got You Under My Skin Stan Getz Quartets
Ive Grown Accustomed to her Face Brookmeyer Getz B and Friends - Tenor Sax
Ive Told Evry Little Star Sonny Rollins & the Contemporary Leaders
Joy Spring Stan Getz The Dolphin
Jungle Strut Gene Ammons Brother Jug
Just Friends Charlie Parker Cafe Society 1950
Kong Neptune Dexter Gordon One Flight Up
Lady Bird Dexter Gordon Youtube
Landslide Dexter Gordon Dexter Calling
Leaping Leo Gene Ammons Leo Parker LP 1947-1950 Gene Ammons
Lets Fall in Love Stan Getz Gerry Mulligan Meets in HiFi part1
Lets Fall in Love Stan Getz Gerry Mulligan Meets in HiFi part2
Like Someone In Love Stan Getz The Steamer
Lion Roars Gene Ammons L. Parker 1947-1950

Lullaby of Birdland Stan Getz 1952-1953
Man With a Horn Stan Getz Best of Anita O'day
McDougals Sprout Gene Ammons 1947-1949
Misty Dexter Gordon Montmarte Jazzhus 1965
Moonglow Gene Ammons Up Tight
Moose The Mooch Charlie Parker at Storyville 031053
Motens Swing Sonny Stitt Sits in w Oscar Peterson Trio
My Little Suede Shoes Charlie Parker Verve
My Old Flame Sonny Rollins Complete Prestige Sessions
My Romance Gene Ammons Boss Tenor
O Morro Nao Tem Vez Stan Getz Jazz Samba Encore
O Pato Stan Getz
On Rainy Afternoons Stan Getz Children of the World
On a Slow Boat to China Sonny Rollins Prestige Profiles
Our Love is Here to Stay Stan Getz & his Cool Sounds
Out of the Blue Sonny Rollins Dig
Pagan Love Song Gene Ammons Bossa Nova
Pennies From Heaven Stan Getz Complete Studio Session w Jimmy Rainey
Prezervation Stan Getz 2-fer
Rainbow People Dexter Gordon Tower of Power
Red Top Gene Ammons 47-49
Scrapple From the Apple Gerry Mulligan Meets Getz in HiFi
Smile Dexter Gordon Dexter Calling
Soul Shack Sonny Stitt Night Letter
Split Kick Stan Getz Roost Quartets
St Thomas Sonny Rollins You Tube
St Thomas Sonny Stitt Brothers 4
Street Tattoo Stan Getz Cade del Mar
Sugar Coated Gene Ammons 47-49
Tangerine Gene Ammons Jug
Tenderly Dexter Gordon
Tenor Eleven Gene Ammons 1949-1950
That Old Feeling Stan Getz Getz Meets Mulligan in HiFi
The Breeze and I Gene Ammons Up Tight
The Chase Dexter Gordon The Chase Dexter Gordon & Gene Ammons
The Lady in Red Stan Getz Quartets
The Rubaiyat Dexter Gordon Citizen Bop
The Shadow of Your Smile Dexter Gordon A Day in Copenhagen
The Way You Look Tonight Stan Getz Complete Studio Sessions
There is No Greater Love Stitt Gene Ammons Boss Tenors 61
Theres a Small Hotel Stan Getz Quartets
Time On My Hands Stan Getz Plays
Too Close For Comfort Stan Getz Gerry Mulligan Meets in HiFi part1
Too Close For Comfort Stan Getz Gerry Mulligan Meets in HiFi part2
Too Marvelous For Words Stan Getz Quartets
Watermelon Man Dexter Gordon Freddie Hubbard Takin Off - Dexter
Watermelon Man Dexter Gordon Original Hits
Wave Dexter Gordon Quartet
Whats New Dexter Gordon 1963 YT
Whats New Stan Getz Quartets
Why Don't I Sonny Rollins Blue Note
Windows of the World Stan Getz What the World Needs Now
You Can Depend on Me Dexter Gordon Daddy Plays the Horn

5. REFERENCES

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