

sudoku :: for electric guitar & saxophone
by jd fuller

from spelen :: for two player games & electronics (2023)

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sudoku :: for electric guitar & saxophone

to be performed by Joshua Garrison & Kyle Leonard

to be performed by Jacob Jones & Aidan Schwarz

to be performed by Michael Morales & Ryan Yumang

the fourth piece from *spelen :: for two-player games & electronics* by JD Fuller

sudoku will feature a guitarist & saxophonist working together to improvise a piece based on data from a game of sudoku that the duo actually played. this is carried out with the hypothesis that working to accomplish such a task musically will be similar to their process of solving the sudoku puzzle.

the system for transforming sudoku data into musical data will be described below:

a number placed in the puzzle counts as that scale degree. 8 sharpens the next note, and 9 flattens the next note. So, for example, if a team puts in-order a 2, 9, 5, 6, 8 and 1 then the roots of the chords generated will be 2 b5 6 and #1 within a key that the duo decides before the game.

The quality of the chord regarding 3rds, 5ths, and 7ths is determined based on the major scale built in thirds from the root, before it is changed by an 8 or 9. So, a 2, 9, 5, 6, 8, and 1 will generate the following chords in F# Major (the key picked by the first duo):

G#m7 C7 D#m7 Gmaj7 (the final chord is F#major7, but I'll be simplifying chords for the players)

One thing of note as well is that if when that chord is placed, a 6, 4, or 9 are directly next to the number placed, an extension will be added. This extension will be flatted or sharpened if there is a 1 or a 2 on the left or right. Precedence goes to 6, then 4, then 9.

If a 3 is placed in the middle square of a smaller sudoku box, with a 9 directly above, and a 1 or 2 on the right, the 9 will be sharpened. If there is a 1 or a 2 on the left, the 9 will be flattened. If there is both a 1 and a 2 on both sides, they will cancel out. Extensions only apply with numbers in the main 3x3 box of the placed number. #4-> #11 ; b 4 -> sus4. 7^ w/ 6th becomes Dim / .7

Finally, the structure will be A B (ABAB)* A B C *No note restrictions

When playing through the first A, if any numbers are fully filled-in, that note cannot be played in the rest of that section by the saxophonist. Within the ABAB, there are no restrictions on notes. For the final A, B, & C, as numbers were fully filled-in in-game, that scale degree can no longer be played, this means that by the end, only non-diatonic, or, no notes can be played by the saxophonist. If a section D must be present for any reason, it will occur at the end.

The data from the game, the score, as well as the fixed media component & final recordings will all be posted on this google doc over time as those things are finished.

Josh & Kyle's Game, as Example for Methodology

Roots (within) F# major

A//

6 9->5 (w/ nat9, 4) 7(w/flat4) 2(w/flat6)
3 (w/ 4) 7(w/ 6) 7 7 (no more 7's)
1 (w/ 6) 1 1 8-> #3
9->5 (w/ 6) 9->1 (no more ones) 3 3 (no more 3's)

B//

4 5(w/11) 8->4 4(w/b6)
9->2 (w/6) 5 8->4 6
9-> 5 8->5(flat9) 8-> 2(w/6) 5(w/b11) (no more 5's)
8-8->4 2(w/6) (no more 2's) 9->6 4

C//

9->6 (no more 6's) 4

So we end up with....

D#m7 C9/11 F#sus4 G#m7b13
A#m11 F.7 Fm7b5 Fm7b5 *****
F#maj13 F#maj7 F#maj7 Bm7
C13 Fmaj7 * A#m7 A#m7 ***

Bmaj7 C#11 Cmaj7 Bmaj7b13
Gm6 C#7 Cmaj7 D#m7
C11 D7b9 Am6 C#sus4 *****
C#maj7 G#m6 ** Dm13 Bmaj7

Dm13 (*****) Bmaj7 ****

of * is when in the first A and final ABC, you can no longer play that scale degree.

A (after 8 measures sax can't play F's until end of A section, final 2 measures no F#)

B x 4 - no restrictions on saxophonist's note choice

Final A B C

Halfway through A, no more F, before last 2 measures of A, no more F#

After 12 measures of B, no more C#, after 2 more measures, no more G#

For final outro / C section, after first chord, no more D#'s, no more B's after the final chord.

The saxophonists' parts will be transposed before they rehearse, record, and perform this.

Tenor Saxophone

sudoku :: for electric guitar & saxophone

to be performed by Aidan Schwarz & Jacob Jones

JD Fuller

Play repeated section 4 Times; Sax follows NR's in 1st and 4th Playings

The musical score consists of 11 staves of music, each containing four measures of repeated notes (indicated by diagonal slashes). The key signature is one flat (Bb) and the time signature is 4/4. The chord symbols for each measure are as follows:

- Staff 1: A_{maj}^7 , C_{m}^7 , $E_{b_{maj}}^7$, E^7
- Staff 2: $A_{m}^9_{b5}$, $C^{\#}_{m}^7$, $B_{b_{maj}}^7_{b13}$, $B_{b_{maj}}^{13}$
- Staff 3: C_{m}^9 , F^{11} , $A_{b_{m}}^9$, $E_{b_{maj}}^7$
- Staff 4: F_{m}^{11} , $A_{m}^7_{b5}$, $C^{\#11}$, $C^{\#11}$
- Staff 5: A_{dim}^7 , C_{m}^9 , F^7 , C_{m}^7
- Staff 6: F^{11} , $A_{m}^7_{b5}$, $E_{b_{maj}}^{13}$, F^9
- Staff 7: F^7 NR: F, D_{m}^{13} NR: D, $G_{m}^7_{b5}$, $A_{m}^7_{b5}$ NR: A
- Staff 8: 1. C_{m}^7 , C_{m}^7 , $B_{b_{maj}}^{13}$, $B_{b_{maj}}^7$ NR: Bb
- Staff 9: 2. G_{m}^7 , G_{m}^7 NR: G, $E_{b_{maj}}^7$, $E_{b_{maj}}^9$ NR: Eb
- Staff 10: $C_{m}^6/9$ NR: C

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Gmaj⁷ **Bbm⁷** **Dbmaj⁷** **D⁷**

Gm^{9b5} **Bm⁷** **Abmaj^{7b13}** **Abmaj¹³**

Bbm⁹ **Eb¹¹** **Gbm⁹** **Dbmaj⁷**

Ebm¹¹ **Gm^{7b5}** **B¹¹** **B¹¹**

Gdim⁷ **Bbm⁹** **Eb⁷** **Bbm⁷**

Eb¹¹ **Gm^{7b5}** **Dbmaj¹³** **Eb⁹**

Eb⁷ NR: Eb **Cm¹³** NR: C **Fm^{7b5}** **Gm^{7b5}** NR: G

1. **Bbm⁷** **Bbm⁷** **Abmaj¹³** **Abmaj⁷** NR: Ab

2. **Fm⁷** **Fm⁷** NR: F **Dbmaj⁷** **Dbmaj⁹** NR: Db

Bbm^{6/4} NR: Bb

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Play repeated section 4 Times; Sax follows NR's in 1st and 4th Playings

Staff 1: $D\#m7$ $C\#11$ $F\#sus^4$ $G\#m7^{b13}$

Staff 2: $A\#m^{11}$ $F\#o7$ $F\#m7^{b5}$ $F\#m7^{b5}$ NR: E#

Staff 3: $F\#maj^{13}$ $F\#maj^7$ $F\#maj^7$ Bm^7

Staff 4: $C\#^{13}$ $F\#maj^7$ NR: F# $A\#m^7$ $A\#m^7$ NR: A#

Staff 5: $Bmaj^7$ $C\#^{11}$ $C\#maj^7$ $Bmaj^7^{b13}$

Staff 6: Gm^{13} $C\#^7$ $C\#maj^7$ $D\#m^7$

Staff 7: $C\#^{11}$ $D7^{b9}$ Am^{13} $C\#sus^4$ NR: C#

Staff 8: $C\#maj^7$ $G\#m^{13}$ NR: G# Dm^{13} $Bmaj^7$

Staff 9: Dm^{13} NR: D# $Bmaj^7$ NR: B

Tenor Saxophone

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Play repeated section 4 Times; Sax follows NR's in 1st and 4th Playings

The sheet music consists of ten staves of music, each containing four measures of chords. The chords are as follows:

Staff	Measure 1	Measure 2	Measure 3	Measure 4
1	E#m7	D11	Gsus4	A#m7b13
2	B#m11	G°7	Gm7b5	Gm7b5 NR: G
3	G#maj13	G#maj7	G#maj7	C#m7
4	D13	Gmaj7 NR: G#	B#m7	B#m7 NR: B#
5	C#maj7	D#11	Dmaj7	C#maj7b13
6	Am13	D#7	Dmaj7	E#m7
7	D11	E7b9	Bm13	D#sus4 NR: D#
8	D#maj7	A#m13 NR: A#	Em13	C#maj7
9	Em13	NR: E#/F	C#maj7	NR: C

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Play repeated section 4 Times; Sax follows NR's in 1st and 4th Playings

Bm¹³ **Bm¹¹** **C#⁷** **Bm¹³**

E⁷ **E¹¹** NR: E **G#m^{9b5}** **D#maj⁹**

Gdim⁷ **Dmaj⁹** **Dmaj⁷** **Dmaj⁷**

Dmaj⁷ **Dm⁷** **Dm^{7#9}** **C#m¹¹**

D#m¹¹ **C#m⁷** **Bm¹³** **Bm⁷** NR: B

C#m⁷ **C#m⁷** **C#m¹¹** NR: C# **F#m⁷**

F#m⁹ **A¹³** **G#dim⁷** **G#m^{9b5}**

Amaj⁹ **Amaj⁷** **F#m^{9b5}** **G#m^{7b5}** NR: G#

Dmaj⁷ **F#m¹¹** NR: F# **Amaj¹³** **Amaj^{7b9}** NR: A

Dmaj⁷ NR: D

Alto Saxophone

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to be performed by Michael Morales & Ryan Yumang

JD Fuller

Play repeated section 4 Times; Sax follows NR's in 1st and 4th Playings

The musical score consists of ten staves of music, each containing four measures of chords. The chords are written in treble clef with a key signature of three sharps (F#, C#, G#) and a 4/4 time signature. The first measure of the first staff has a repeat sign. The chords are as follows:

Staff	Measure 1	Measure 2	Measure 3	Measure 4
1	G#m13	G#m11	A#7	G#m13
2	C#7	C#11 NR: C#	E#m9b5	B#maj9
3	Edim7	Bmaj9	Bmaj7	Bmaj7
4	Bmaj7	Bm7	Bm7#9	A#m11
5	B#m11	A#m7	G#m13	G#m7 NR: G#
6	A#m7	A#m7	A#m11 NR: A#	D#m7
7	D#m9	F#13	E#dim7	E#m9b5
8	F#maj9	F#maj7	D#m9b5	E#m7b5 NR: E#
9	Bmaj7	D#m11 NR: D#	F#maj13	F#maj7b9 NR: F#
10	Bmaj7		NR: B	