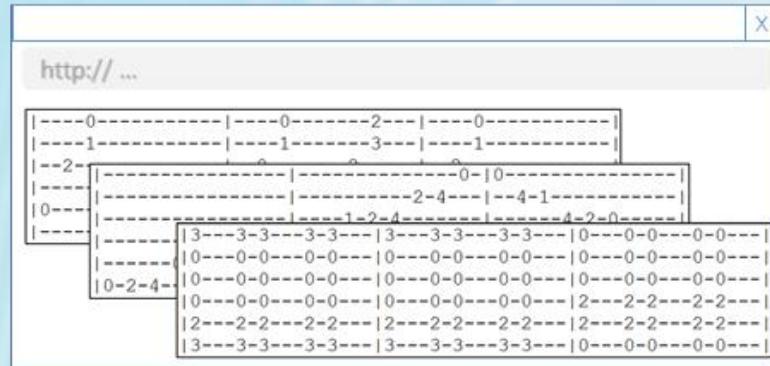


AR Hero: Generating Interactive Augmented Reality Guitar Tutorials



Lucchas Ribeiro Skreinig, Ana Stanescu, Shohei Mori, Frank Heyen,
Peter Mohr, Michael Sedlmair, Dieter Schmalstieg, Denis Kalkofen
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Motivation

Challenges

Guitar Tutorial

Future Work

We Will Rock You
Words and Music by Brian May

Strum Pattern: 1
Pick Pattern: 1
Moderately in 2

N.C.(Em)

Em C5 A5 A D/A

Verse:
I had to, you're a boy, make a big noise play-in' in the street, gon-na be a big
2,3. See additional lyrics

N.C.(Em)

man some day, You got mud on your face, you big disgrace, kick-in' your can all over the place sing-in'

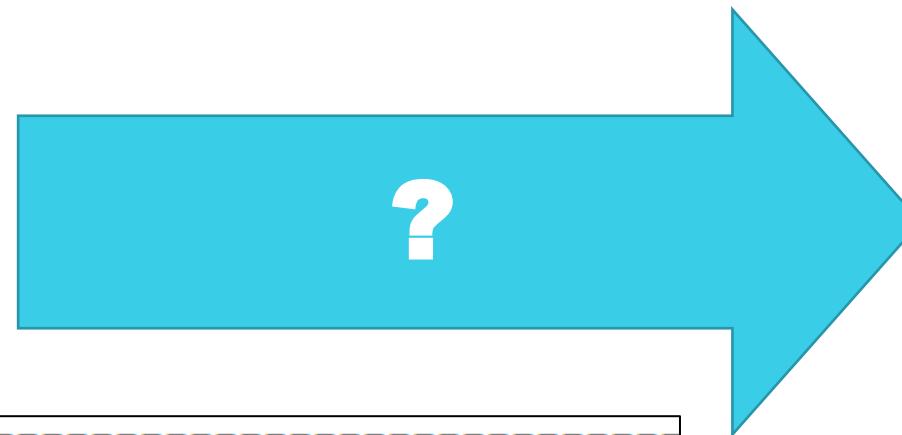
Chorus:
N.C.(Em) I-2.
We will, we will rock you. We will, we will rock you.

I-2.
rock you.

All Right

E B G 5 9
D 5 9
A 3 8
E

image source: <https://www.virtualsheetmusic.com/>



- Self-teaching with online material challenging
- Augmented reality approach to assist beginners
- Address shortcomings of traditional methods



- No feedback on user input
- Visualization not integrated into instrument
- Difficult to generate lessons



[20] B. Patzer, D. C. Smith, and J. R. Keebler.
Novelty and Retention for Two Augmented Reality Learning Systems,
Proc. Human Factors and Ergonomics Society Annual Meeting, 2014



www.virtualguitarmusic.com

We Will Rock You

Words and Music by Brian May

String Pattern: 1
Pick Pattern: 1
Moderately, in 2

N.C.(Em)

Bud - dy, you're a boy, make a big noise play - in' in the street, gon - na be a big
2, 3. See additional lyrics

N.C.(Em)

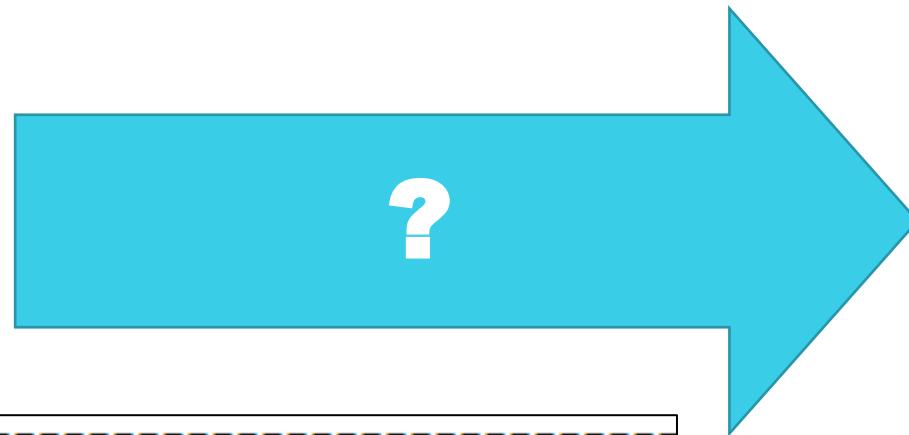
man some day. You got mad on your face, you big dis - grace, kick in' your can all o ver the place sing - in':

N.C.(Em)

We will, we will rock you. We will, we will rock you.

E
B
G - 5
D - 5
A - 3
E

One resolution example

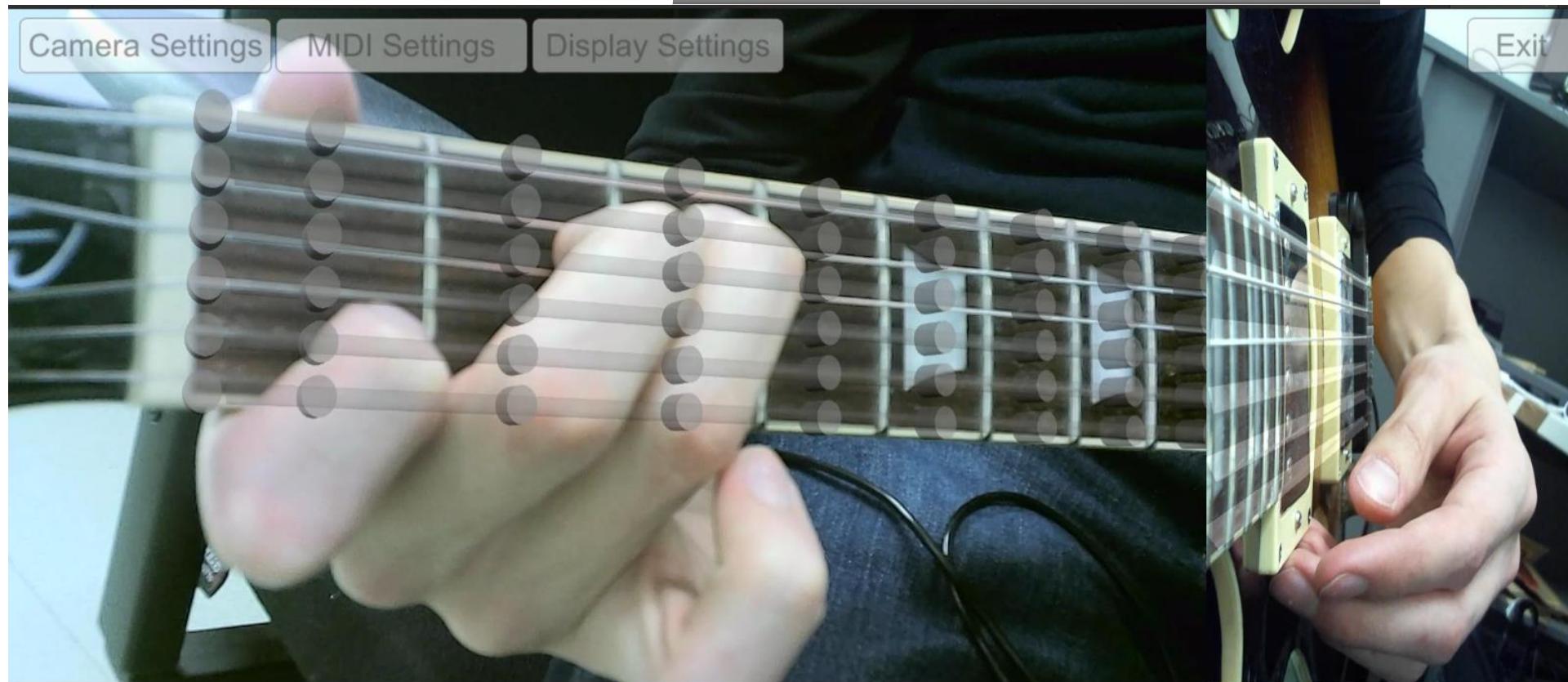


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Preview Pose:

C ▾

Country Roads - John
Denver ▾

Start
Playing

Set Default

Align Default

Strings
Alignment

Fret
Alignment

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The image shows a close-up of a person's hands playing a six-string electric guitar. A virtual reality (VR) interface is overlaid on the video. At the top, there are three buttons: "Camera Settings", "MIDI Settings", and "Display Settings". In the top right corner is an "Exit" button. The main interface features a fretboard diagram with grey dots representing frets and vertical dashed lines representing strings. The diagram shows finger positions for a specific chord or scale pattern. Below the diagram are several control buttons: a "Mode" section set to "Continuous" with icons for volume, shuffle, and repeat; a play/pause button; and a tempo setting of "55 bpm". To the right are navigation arrows for "Back" and "Forward".

3	3	0	0
2	2	2	2
0	0	1	1
0	0	2	2
0	0	0	0
3	3	2	2

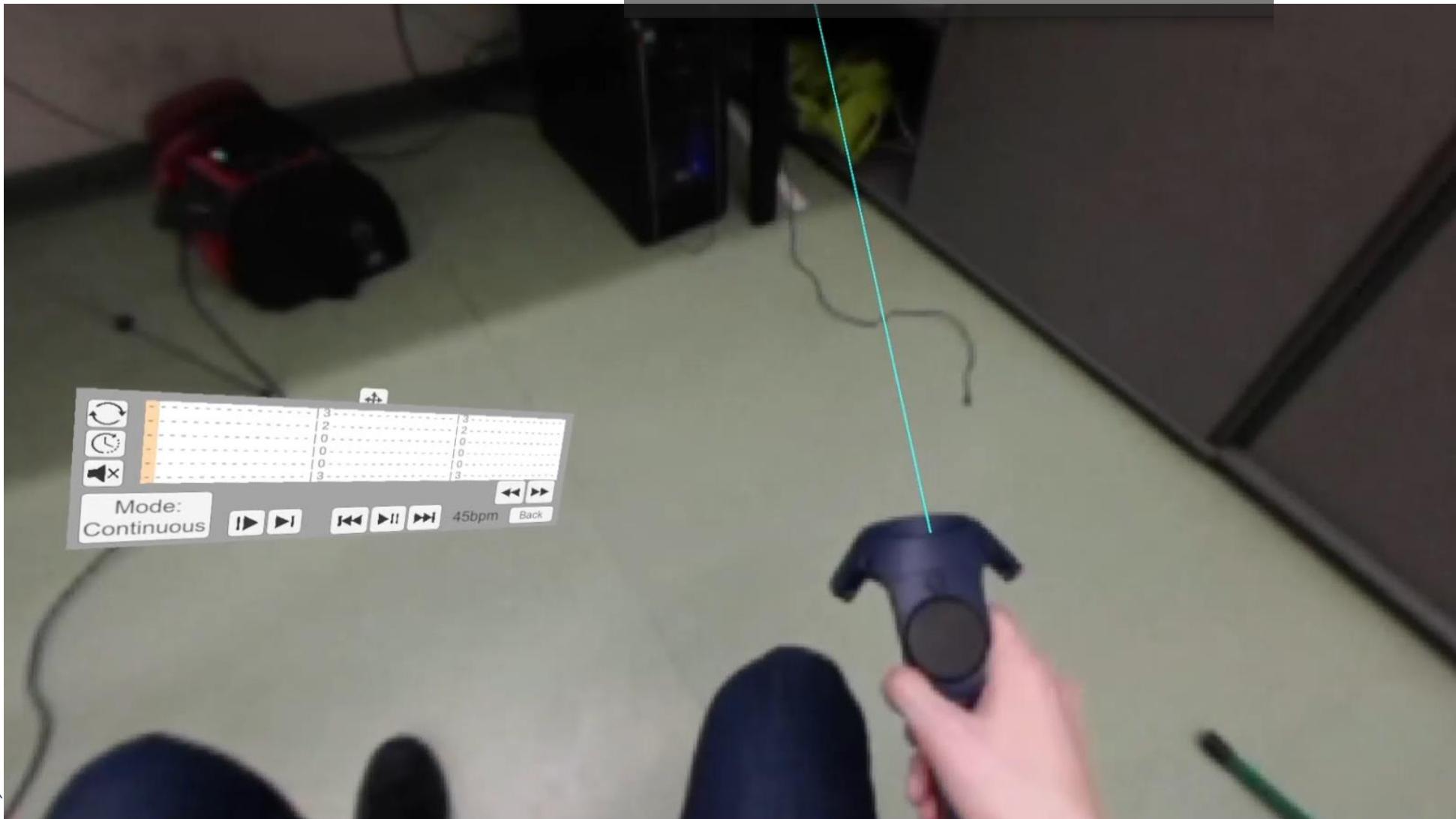


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ULTIMATE GUITAR COM

Tabs Shots Courses Articles Forums + Publish tab Pro

Enter artist name or song title

SIGN UP LOG IN

TOP TABS

Top 100 Tabs by Hits

Top 100 Tabs by Rating

TOP CONTRIBUTORS

Top Users by UG IQ

Top Tabbers

Top Writers

AD Der neue Kia Sportage

Kia Österreich

Mehr erfahren

How does the top work?

DAILY ALL-TIME

ARTIST	SONG	HITS	TYPE
Led Zeppelin	Stairway To Heaven	2,472	Tab
Metallica	Nothing Else Matters	1,932	Tab
Eagles	Hotel California (ver 2)	1,572	Tab
Nirvana	Smells Like Teen Spirit	1,161	Tab
The Beatles	Here Comes The Sun (ver 3)	1,158	Tab
Elvis Presley	Cant Help Falling In Love	1,128	Tab
Bob Dylan	Come As You Are	1,041	Tab
Red Hot Chili Peppers	Sweet Child O Mine	1,017	Tab
Aerosmith	Wish You Were Here (ver.5)	957	Tab
Linkin Park	Do I Wanna Know	957	Tab
Red Hot Chili Peppers	Under The Bridge	921	Tab

E
B
G
D
A
E

5 9
5 9
3 8
Monkeys

11 Red Hot Chili Peppers Under The Bridge

<https://www.ultimate-guitar.com/>



Do I Wanna Know tab by Arctic Monkeys

EDIT ADD TO PLAYLIST FAVORITE

2,819,839 views, added to favorites 40,438 times

Difficulty: beginner

Tuning: E A D G B E

Key: Gm

Author [Zottepee \[a\]](#) 607. 5 contributors total, last edit on Oct 11, 2018.

VIEW OFFICIAL TAB

BACKING TRACK

TONEBRIDGE

DOWNLOAD PDF

Arctic Monkeys - Do I Wanna Know?

Tabbed by Tim Van de Voorde

UPGRADE: I've just upgraded the tab, totally forgot I made this tab 2 years ago very fast based on their first live version. Now I basically made a whole new tab with more details and structure. Hope you like it, rock on!
 (First version on 24/05/13)
 (Upgraded lay out on 10/10/15)

[Intro]

```
e|-----|
B|-----|
G|-----|
D|-----|
A|-----1---|
E|--1h3---3-|
```

[Verse/Main riff]

```
e|-----|
B|-----|
G|-----|
D|-----1h3-1~-----|
A|-----1-----3h5-3~-----1-3/5-3-----1h3-5-3h5-----1-----|
E|--1h3-----3-----1h3-3~-----|
```

(5x)

[Chorus]

```
e|-----|
B|-----|
G|-----|
D|-----1h3-1~-----|
A|-----1-----3/5-3~-----1-3/5-3-----/5-----|
E|--1h3-----|
```

<https://tabs.ultimate-guitar.com/tab/arctic-monkeys/do-i-wanna-know-tabs-1248997>



En4	-----0-----	-----0-----	2-----	-----0-----	-----0-----	2-----	-----0-----	-----0-----	2-----	-----0-----	2-----
Bn3	-----1-----	-----1-----	3-----	-----1-----	-----1-----	3-----	-----1-----	-----1-----	3-----	-----1-----	3-----
Gn3	-----2-----	-----0-----	2-----	-----2-----	-----0-----	2-----	-----2-----	-----0-----	2-----	-----0-----	2-----
Dn3	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----	-----0-----
An2	0-----	3-----	0-----	3-----	0-----	3-----	0-----	3-----	0-----	3-----	0-----
En2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

 arcticmonkeys - doiwannaknow.txt	5 KB
 Emajorminorscale.txt	1 KB
 jamesblunt - high.txt	1 KB
 johndenver - countryroads.txt	1 KB
 johnnycash - hurt.txt	5 KB
 thewhitestripes - sevennationarmy.txt	4 KB



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Camera Settings MIDI Settings Display Settings Exit

Mode: Continuous

80 bpm

Back

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Camera Settings MIDI Settings Display Settings Exit

Mode: Continuous

40 bpm

Back

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Notation (Tablature):

- - -	3 - - 3 - 3 - -	3 - - 3 - 3 - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -
- - -	2 - - 2 - 2 - -	2 - - 2 - 2 - -	2 - - 2 - 2 - -	2 - - 2 - 2 - -
- - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -	2 - - 2 - 2 - -	2 - - 2 - 2 - -
- - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -
- - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -
- - -	3 - - 3 - 3 - -	3 - - 3 - 3 - -	0 - - 0 - 0 - -	0 - - 0 - 0 - -

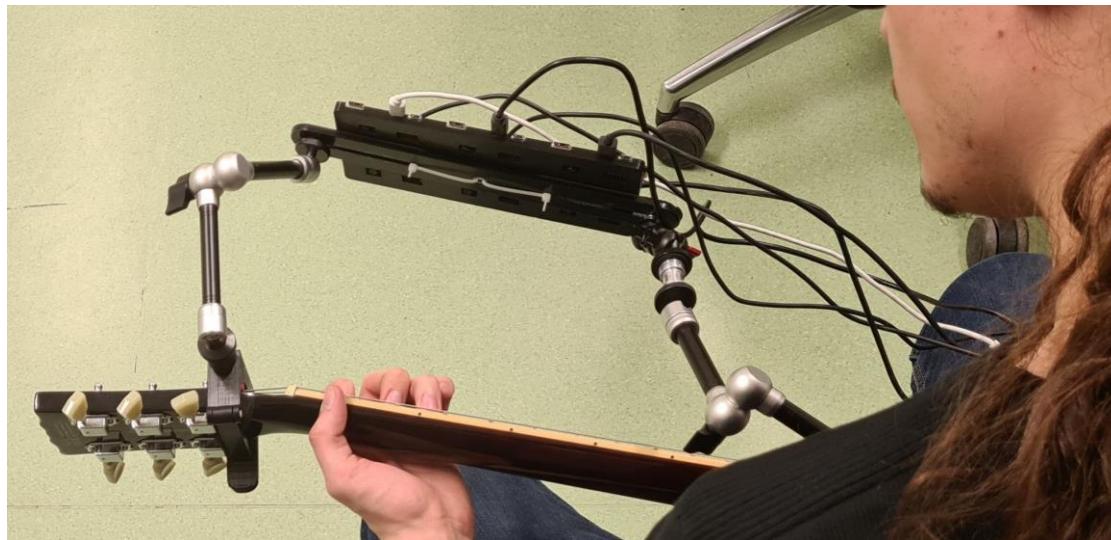


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Light Field
Reconstruction



[14] B. Mildenhall, P. P. Srinivasan, R. Ortiz-Cayon, N. K. Kalantari, R. Ramamoorthi, R. Ng, and A. Kar.
Local Light Field Fusion: Practical View Synthesis with Prescriptive Sampling Guidelines,
ACM Transactions on Graphics, 2019



Motivation

Challenges

Guitar Tutorial

Future Work



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Challenges

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Summary

- Responsive playback appealing to beginners
- Easy to produce lesson content
- Multiple options for visualization and guidance



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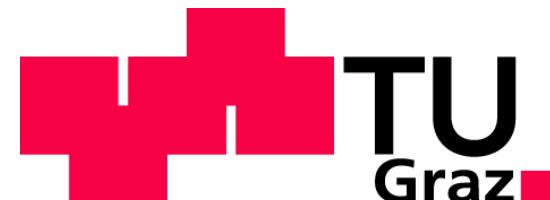


Lucchas Ribeiro Skreinig BSc

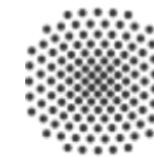
luchas.ribeiroskreinig@icg.tugraz.at



Institute of Computer Graphics and Vision



Graz University of Technology



University of Stuttgart

Institute for Visualization and Interactive Systems

