

A musical score in 4/4 time, consisting of two staves (treble and bass clef) and four measures. The notes are: Measure 1: Treble (C4, E4), Bass (C3, G2); Measure 2: Treble (Bb4, Gb4), Bass (F#3, E3); Measure 3: Treble (C5, B4), Bass (C3, G2); Measure 4: Treble (C5, B4), Bass (C3, G2). Below the staves, Roman numerals are provided for each measure: C:I, vii^{o7}/ii, ii, and V⁶₅.

C:I vii^{o7}/ii ii V⁶₅

Harmalysis

A language for encoding roman numerals

Néstor Nápoles López and Ichiro Fujinaga
McGill University, CIRMMT

C:I vii^{o7}/ii ii V₇^b

"C=>:I" "vii^{o7}/ii" "ii" "V7^b"



```

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  <pitch>
    <step>C</step>
    <octave>3</octave>
  </pitch>
  <duration>2</duration>
  <staff>2</staff>
  <lyric>
    <text>C=>:I</text>
  </lyric>
</note>
<note>
  <pitch>
    <step>C</step>
    <alter>1</alter>
    <octave>3</octave>
  </pitch>
  <duration>2</duration>
  <staff>2</staff>
  <lyric>
    <text>viio7/ii</text>
  </lyric>
</note>
</measure>
...

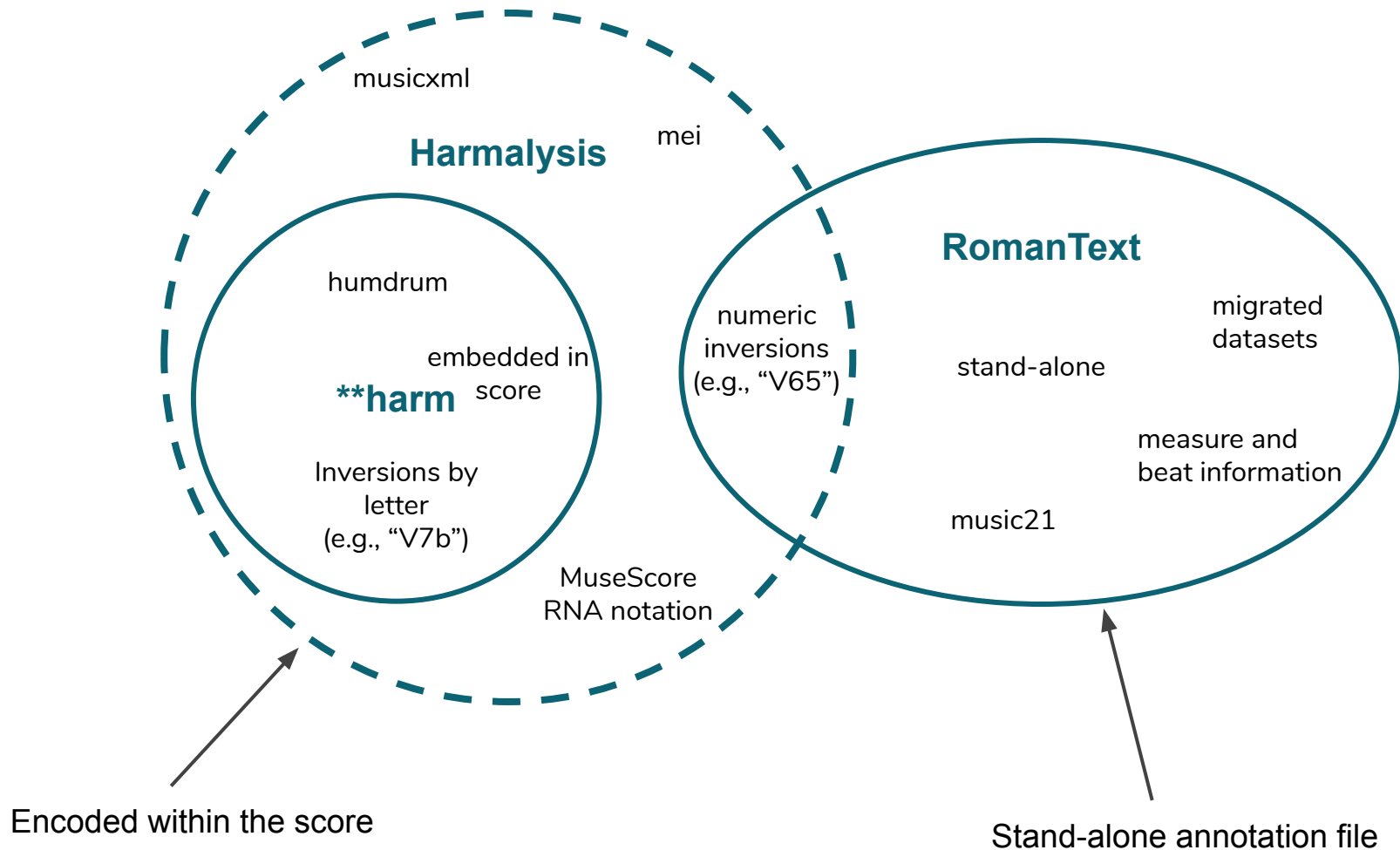
```

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Roman Numeral Analysis Formats



Comparison

Feature	Supported by		
	**harm	RomanText	harmalysis
Flats ("-")	Yes	Yes	Yes
Flats ("b")	No	Yes	Yes
Case-sensitive degrees	Yes	Yes	Yes
Seventh chords	Yes	Yes	Yes
Inversions (letter)	Yes	No	Yes
Inversions (numeric)	No	Yes	Yes
Inversions 11th, 13th chords	Yes	No	Yes
Configurable interpretation of VI in minor mode	No	Yes	Yes
Configurable interpretation of VII in minor mode	No	Yes	Yes
Added intervals	Yes	Yes	Yes
Missing intervals	No	Yes	Yes
Augmented sixth chords	Yes	Yes	Yes
Neapolitan chords	Yes	Yes	Yes
Cadential Six-Four	No	Yes	Yes
Common-tone diminished seventh	No	No	Yes
Tristan chord	Yes	No	Yes
MuseScore's half-diminished seventh notation	No	No	Yes
Tonicizations	Yes	Yes	Yes
Modulations	Yes	Yes	Yes
Embeddable within the score	Yes	No	Yes
Stand-alone annotation file	Yes	Yes	No

"V7b"

"V65"

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"V7b"

"V65"



Thank you!

Download the source code:

- <https://github.com/napulen/harmalysis>

Or the Python package with the harmalysis interpreter:

```
pip install harmalysis
```

- <https://pypi.org/project/harmalysis/>

```
napulen@napulen-GL55...
napulen@napulen-GL552VW:~$ python3 -m harmalysis
(C major) > V65/V
Current key: C major
Tonicized key: G major
Intervallic construction: DM3P5m7
Inversion: 1
Chord label: D dominant seventh
Default function: dominant
(C major) > V7b/V
Current key: C major
Tonicized key: G major
Intervallic construction: DM3P5m7
Inversion: 1
Chord label: D dominant seventh
Default function: dominant
(C major) > |
```



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