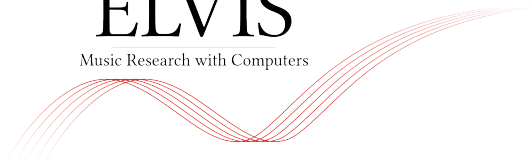


# ELVIS

Music Research with Computers



## Electronic Locator of Vertical Interval Successions

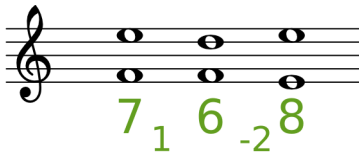
Julie Cumming, Christopher Antila, and Others

Montréal Digital Humanities Showcase  
UQAM

24 January 2014

- John Sinclair's *Corpus, Concordance, Collocation* (1991)
- What are the most commonly repeated patterns in polyphonic music?
- We still don't understand counterpoint

# Contrapuntal Modules



- More than 6000 pieces
- Focus on early music
- Score-like symbolic formats

- Modular, extensible Python API
- Well-documented
- Well-tested
- Foundation for the future

# Counterpoint Web App

- Built on the VIS Framework
- Contrapuntal module analysis
- Easy for non-programmers
- Visit `counterpoint.elvisproject.ca`

# Import

Import

Analysis Settings

Experiment Settings

Next →

Add files to the list so they will be imported.

Browse...

Jos2308.krn

Upload

Filename


Jos2308.krn


Select all


Deselect all


Remove selected

# Choose Parts

 Import

 Analysis Settings

 Experiment Settings

Next 

Select pieces and choose settings for analysis.

☒ Global settings ☒ Settings for selected

Select all

Deselect all



# Experiment

Import

Analysis Settings

Experiment Settings

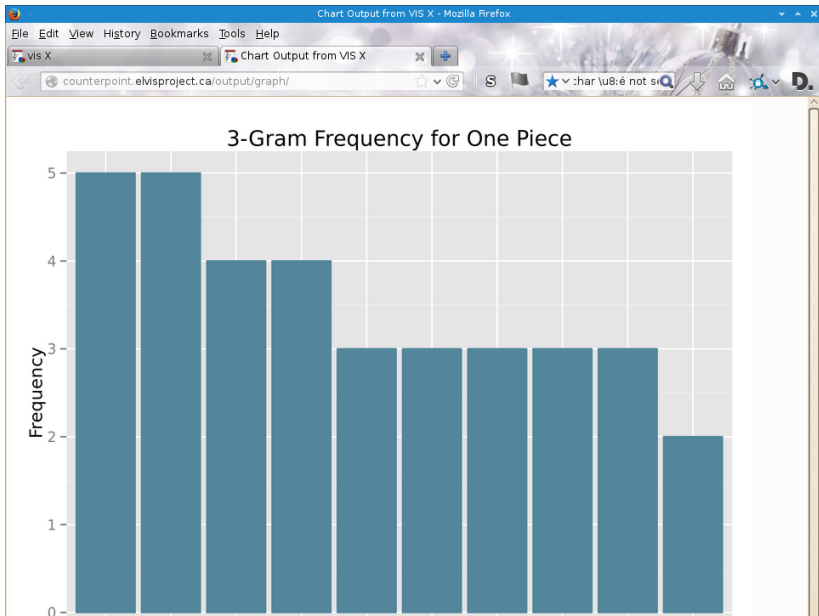
Visualize →

Choose settings for the experiment.

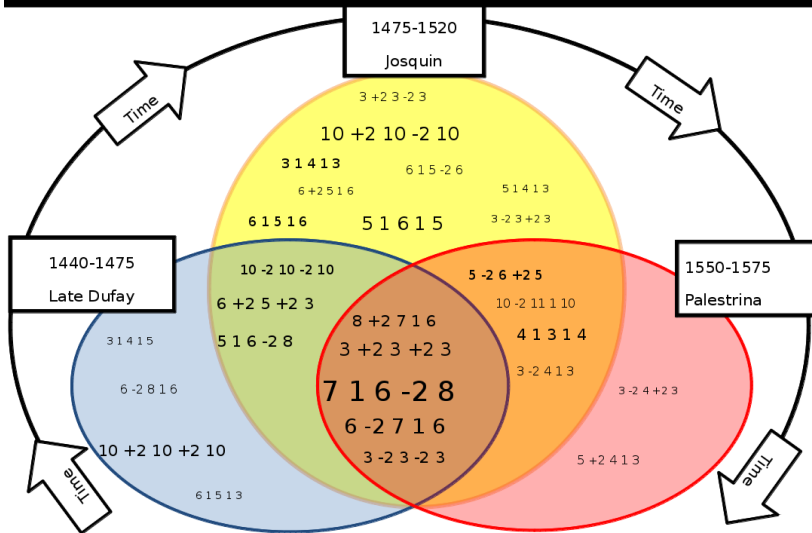
**Experiment to Run**  
☐ Intervals  
☒ Interval n-grams  
 The length of the n-gram you wish to produce.

**How to Show Results**  
☐ Table  
☒ Bar graph  
"Top X" Filter  
 Show only the x highest results.  
Threshold Filter  
 Do not show results with fewer than this many occurrences.

# Visualize



## Module Frequency over Time



## ELVIS Project Website

`elvisproject.ca`

## Julie Cumming

`julie.cumming@mcgill.ca`

## Christopher Antila

`christopher@antila.ca`

And visit our poster!

# Bonus: the Database Website

ELVIS

AboutProjectsQueries

EveryoneMe

LoginRegister

Search

Add content

View all:

Corpora

Composers

Pieces

Movements

Tags



## Piano Sonata (arrangement), Hob.XVI:8

uploaded by [Christopher Antila](#) on Sept. 5, 2013, 1:53 p.m.

Composer: [Haydn, Joseph](#)

Date of composition: Jan. 1, 1766

Corpus: [Yale Corpus](#)

Number of voices: 0

Number of downloads: 0

Number of queries: 0

Comment: ...

Movements:

Movement 4, Hob.XVI:8

Movement 3, Hob.XVI:8

Movement 2, Hob.XVI:8

Movement 1, Hob.XVI:8

INSTRUMENTS

piano

Austria

solo sonata

Haydn, Joseph

Download

Save

edit

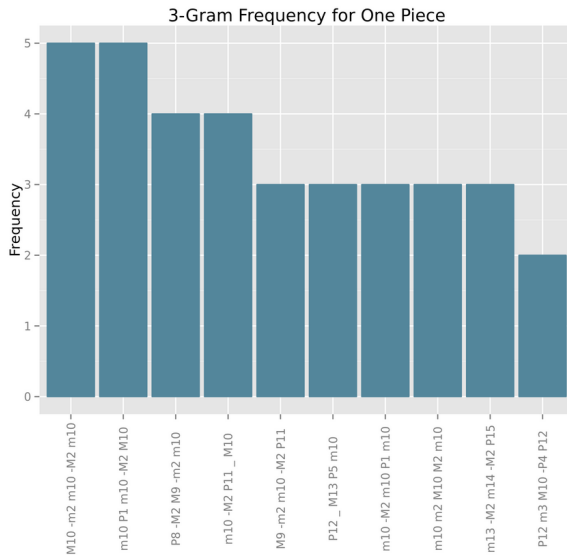
delete

DT

# Bonus: Module in Music

The diagram illustrates a transformation of a musical module. On the left, a single staff in treble clef contains four whole notes: G4, A4, B4, and C5. Below these notes are the green labels 7, 1, 6, and -2, with an 8 below the -2. An arrow labeled "becomes" points to the right. On the right, a four-staff system is shown. The first staff is empty. The second staff contains a half note G4, a half note A4, and a whole note B4. The third staff contains a half note G4, a half note A4, and a whole note B4. The fourth staff contains a whole note G4. A green dashed box encloses the second and third staves, with the word "same!" written above it in green. Below the notes in the dashed box are the green labels 7, 1, 6, and -2, with an 8 below the -2. The label 8 is also placed below the whole note G4 in the fourth staff.

# Bonus: the Bar Graph



# Bonus: Score Summary

for Piece(s)

The screenshot displays a music analysis application window titled "Palestrina Kyrie 3Grams Summary.pdf - Okular". The interface includes a top menu bar (File, Edit, View, Go, Bookmarks, Tools, Settings, Help) and a toolbar with navigation and zoom controls. On the left, a sidebar contains "Contents", "Thumbnails", "Reviews", and "Bookmarks". The main area shows a grid of ten musical staves, each with a rhythmic notation below it. The notation consists of a sequence of numbers and subscripts, representing rhythmic values. The staves are arranged in two rows of five. The first row contains staves 1 through 5, and the second row contains staves 6 through 10. Each staff is labeled with its corresponding rhythmic notation and a count in parentheses.

Staff	Rhythmic Notation	Count
1	$5_1 1_1 3$	(207)
2	$6_+ 2_+ 5_+ 2_+ 3$	188
3	$3_1 2_+ 3$	186
4	$3_+ 2_+ 5$	183
5	$6_1 5_1 4$	167
6	$3_+ 2_+ 3$	151
7	$5_+ 2_+ 4_1 3$	151
8	$3_+ 2_+ 4_1 3$	146
9	$4_1 3_+ 4$	144
10	$3_1 4_1 5$	143

At the bottom of the window, a navigation bar shows "1 of 1" with arrows for navigation.



# Bonus: Composer Comparison

