The Jazz Ontology: Organising Metadata in Dig That Lick

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The *Jazzomat* Project (2012-2017)

- Background to the *Dig That Lick* project
- Martin Pfleiderer, Klaus Frieler, Jakob Abeßer at the University of Music Franz Liszt Weimar
- Investigation of jazz improvisation
- Produced the **Weimar Jazz Database**:
  - 456 transcriptions of monophonic solos from well-known musicians
  - Aligned to audio, chords, beats
  - Released as an SQL database

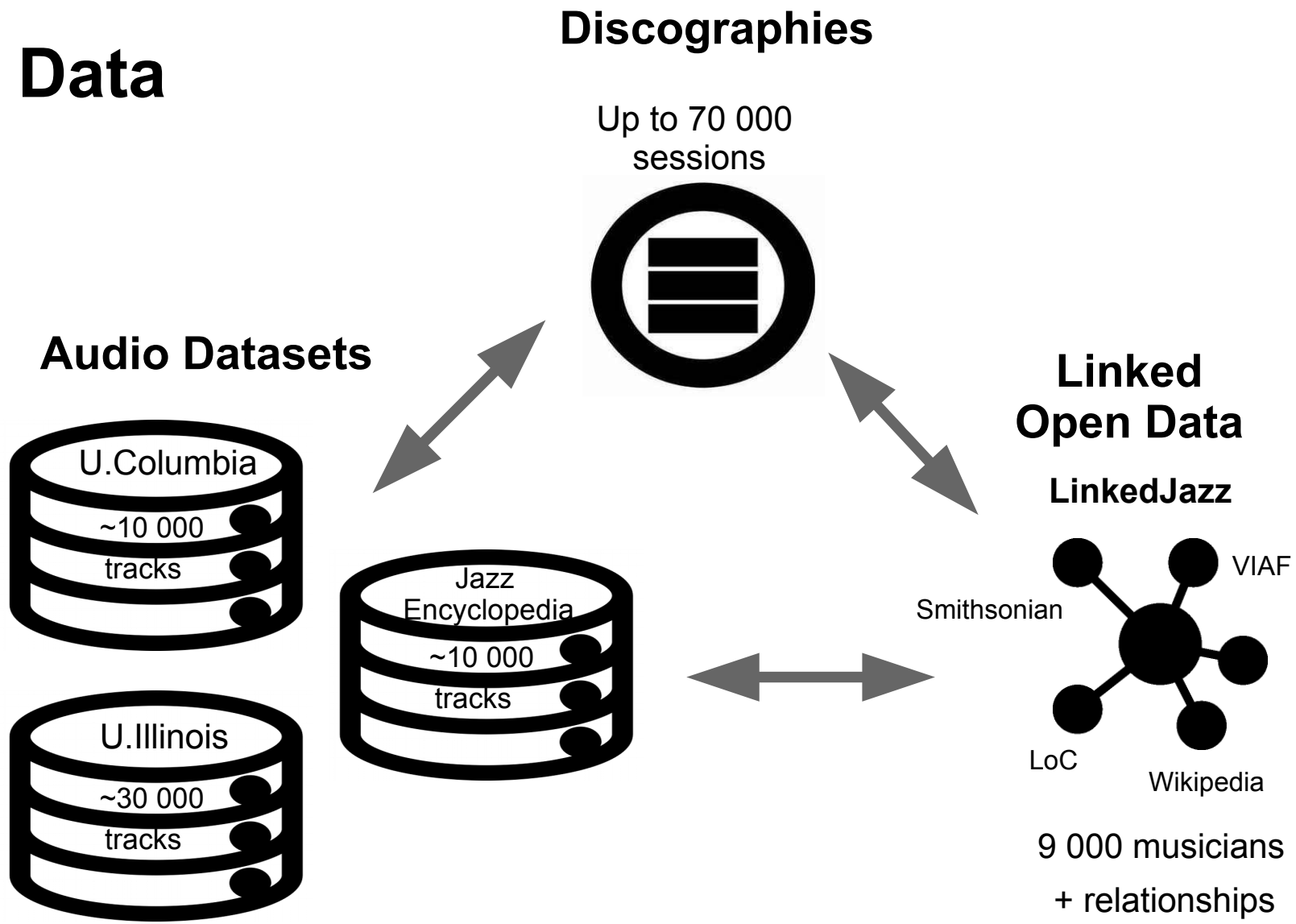
WJD Database Structure

Table name	Description
`beats`	Table for beat annotation of WJD melodies, referenced by `melody(id)`
`composition_info`	Info re composition, refd by `melody(id)`
`db_info`	Info re distributed database file (version information, license, etc.)
`esac_info`	EsAC info (if EsAC), refd by `melody(id)`
`melody`	Main table for all melody events
`melody_type`	Type of melody: WJD solo or EsAC (Essen Folk songs), refd by `melody(id)`
`popsong_info`	Pop song info, refd by `melody(id)`
`record_info`	Info re audio source, refd by `melody(id)`
`sections`	All sections (phrase, chorus, form, chords, etc.), refd by `melody(id)`
`solo_info`	Solo info refd by `melody(id)`
`track_info`	Info specific to a track on a CD
`transcription_info`	Transcription info refd by `melody(id)`

The *Dig that Lick* Project (2017-2019)

- Full title: *Dig that lick: Analysing large-scale data for melodic patterns in jazz performances*
- **Infrastructures** for large-scale semantic audio analysis
- **Interfaces** for selection, analysis, and aggregation
- **Analysis** of melodic patterns in a large jazz corpus
- **Link** to metadata
- **Interpret** evidence of musical influence

Data: Audio and Metadata

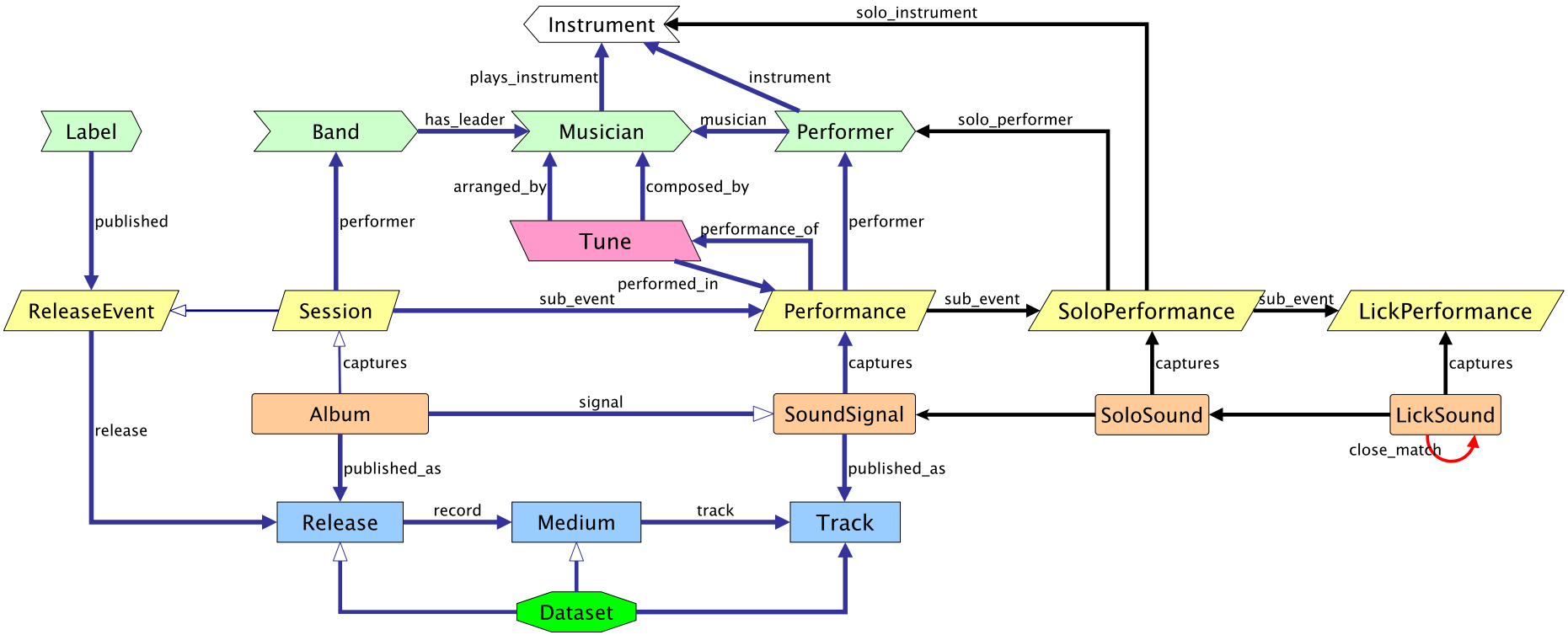


The Metadata Bottleneck

- Who is soloing now?
- Audio obtained from music libraries included only: Label, Catalog number, Artist, CD title, Track title
- Semiautomatic matching to Lord's Jazz Discography, MusicBrainz and Discogs provided much richer data (full lineup, dates, places)
- Jazz Encyclopedia had all this, already digitised in a CSV file (!)
- For high quality, human effort is hard to avoid
  - Named entity resolution
  - Disambiguation
  - Reconciliation

The Jazz Ontology

[Proutskova et al., 2022] The Jazz Ontology: A semantic model and large-scale RDF repositories for jazz. *J. Web Semantics*, 74:100735.



The *DTL1000* Dataset

- 1000 tracks selected randomly from jazz collections (100 per decade from 1920-2019)
- Note tracks automatically extracted from monophonic solos
- 1700 solos, 6M pitch n-gram instances, 5.6M interval n-grams
- Metadata expressed in RDF using a bespoke ontology and accessed via SPARQL requests
- Metadata used to filter searches and shown in results
- Similarity search combines DTL1000 with the Weimar Jazz Database, Charlie Parker Omnibook and Essen Folk Song Collection
- Prereleased on `https://osf.io/buxvr/`

Pattern Search: List Results

Dig That Lick

Switch to Pattern search

New search | All searches | Documentation | Help | About | Print
Login

Pattern Similarity Search

Similarity search

Pattern: -1,-2,-1,3,3,3,-1,-2

Transformation: Semitone Intervals

Pin pattern elements

First Last

Search

Options

Minimum similarity (80%)

65 70 75 80 85 90 95 100

Maximum length difference: 2

Maximum edit distance: 1

Minimum frequency: 2

Keep overlapping instances

Within single phrase

Preserve contour (ascending)

Preserve pitch range (9)

Databases

Dig That Lick — Metadata filter

Weimar Jazz Database — Metadata filter

Charlie Parker Omnibook

EsAC Folksong Database

Show columns

Raw frequency Pitch range Contour Start position Duration

Group by

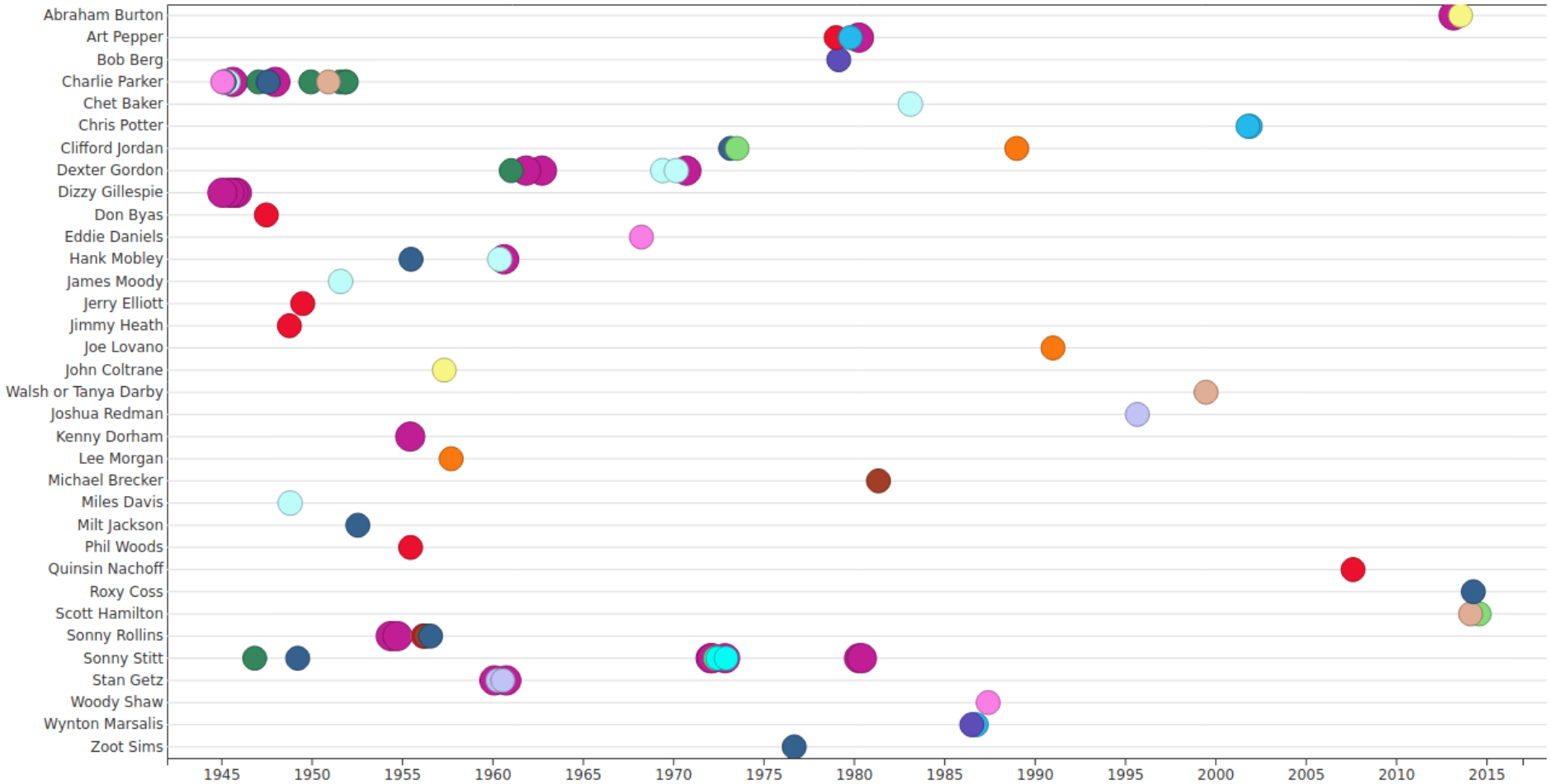
Pattern Performer

Found 82 similar (15 unique) pattern instances:

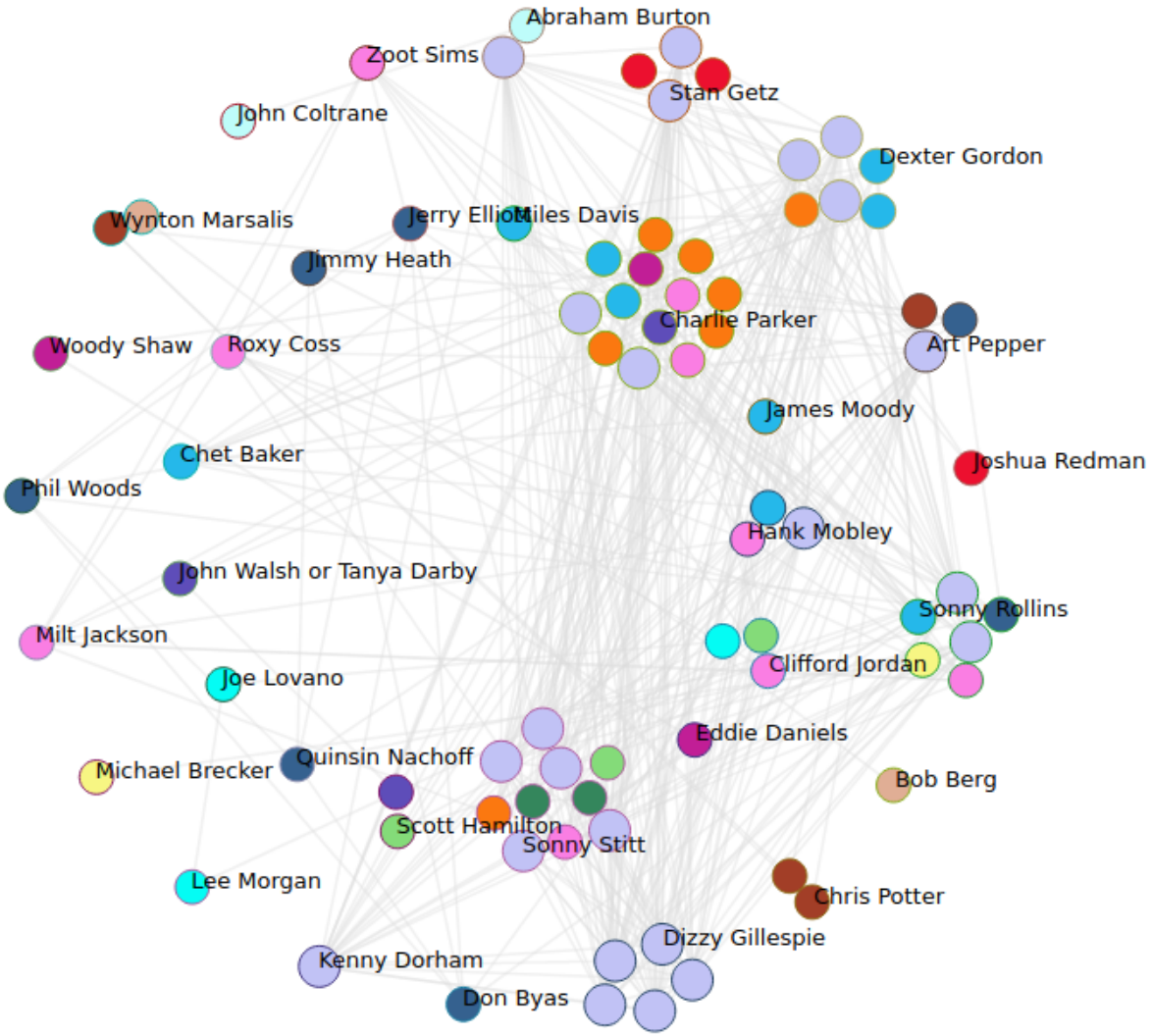
(44) (38)

#	Pattern	Performer	Title	Recording year	Instrument	Style	Similarity	Edit distance
1	-1,-2,-1,3,3,3,-1,-2 (8)							
		Abraham Burton	Without a song	2013	Tenor saxophone	Hardbop	1.00	0
		Art Pepper	How high the moon	1980	Alto saxophone	Cool	1.00	0
		Charlie Parker	Donna Lee	1947	Alto saxophone	Bebop	1.00	0
		Charlie Parker	Ko-Ko	1945	Alto saxophone	Bebop	1.00	0
		Dexter Gordon	Cheese Cake	1962	Tenor saxophone	Hardbop	1.00	0
		Dexter Gordon	Society Red	1961	Tenor saxophone	Hardbop	1.00	0

Pattern Similarity Search: Timeline Results



Pattern Similarity Search: Network Results



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Acknowledgements

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