



Semantic Web Agents Redux

FROM KNOWLEDGE
REPRESENTATION TO AI-
DRIVEN DISCOVERY

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PENN LIBRARIES

Semantic Web Vision

- ♦ Semantic Web theorists envisioned intelligent agents using structured RDF/OWL to take meaningful actions on behalf of users.



Gen AI-Assisted Discovery

- ♦ The integration employs strategies in prompt development and semantic retrieval that merge classic semantic web principles with Gen AI capabilities, providing users with contextually enriched exploration of library resources and linked data.



BIBFRAME



- ♦ BIBFRAME is a formal semantic representation.
- ♦ The data in Share-VDE is comprised of BIBFRAME clusters. Penn Libraries catalog is transformed, enriched and clustered into the BIBFRAME model.
- ♦ When we query the endpoints of the BIBFRAME APIs, we are asking for the pre-computed inference over our Penn Libraries data.

CHAT RESPONSE based on BIBFRAME + SHARE-VDE API

Johann Sebastian Bach

Bach | J.S. Bach | J. S. Bach | J S Bach
German composer (1685–1750)


Selected Works >

Ask AI about Johann Sebastian Bach v

Works held by Penn Libraries:

- [Piano music, 4 hands. Selections](#)
- [Concertos. BWV 593. Organ](#)
 - 2 publication(s) with Penn holdings:
 - Bach.
 - Item
 - Item
 - Concertos and fugues /
 - Item
 - Item
 - Item
 - Item
 - Item
- [Präludium und Fuge. BWV 552. Organ](#)
 - 6 publication(s) with Penn holdings:

New Chat



Links v

[Wikidata page](#)

Ask AI about Niccolò Machiavelli

- [Istorie fiorentine](#)
 - 3 publication(s) with Penn holdings:
 - [Histoire de Florence /](#)
 - [Item](#)
 - [Historie di Nicolo Macchiauelli, cittadino, et secretario...](#)
 - [Item](#)
 - [Item](#)
 - [Item](#)
 - [Item](#)
 - [Item](#)
 - [Item](#)
 - [The Florentine historie /](#)
 - [Item](#)
 - [Item](#)
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New Chat

💡 Suggested questions:

Who influenced Niccolò Machiavelli's development?

Who were Niccolò Machiavelli's teachers or mentors?

Did Niccolò Machiavelli have notable students or protégés?



Links

[Wikidata page](#)