



# **Knowledge Discovery Interest Group Summary**

Chair: Raffaele D'Abrusco

Vice-Chair: Yihan Tao

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# KDIG Session Talks

- Alberto Accomazi (ADS)

The AstroBibPile: Building a Dataset to Support AI-enabled Bibliography Curation efforts

Proposing AstroBibPile, an open dataset of OA papers and annotated bibliographies to train AI bibliographic annotation pipelines, which can help accelerate the data curation process.

- Yan Shao (Zhejiang Lab)

Generative Named Entity Normalization for Astronomical Facilities

Exploring the effectiveness of using LLMs to normalise the names of astronomical facilities names in ATEL to AAS or ADS styles.

- Kai Polsterer (HITS)

Spherinator & HIPSter & Jasmine

Demonstrating using unsupervised deep learning to interpret astrophysical simulations and a demo with Aladin Lite using HiPS tiling to allow for explorative and interactive access to simulation data.

# Discussion

- **Panelists:** Alberto Accomazzi, Rafael Martinez-Galarza, Kai Polsterer

- **Topics:**

1. How can state-of-the-art AI technologies, such as LLMs, foundation models and agents enhance the VO?

2. What are the potential applications of these AI technologies within the VO framework?

3. What are the best practices and strategies for integrating AI agents and models with VO tools and science platforms that can help user efficiently access to and analyse astronomical data? What are the challenges?

# Next Step Goals

- Making the dataset ready
  - Standard, open datasets for model training
  - Inserting domain knowledge
  - Publishing data challenges to attract more people to contribute
- Continuing the investigation of use cases and best practices for integrating LLMs and AI with VO tools
  - Information extraction from publications
  - Data/bibliography curation
  - Data query, translate natural language to ADQL
  - etc.
- Continueing to coordinate/collaborate with science platforms for bringing ML/AI methods to data

# Contacts

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