

Knowledge Discovery Interest Group

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CENTER FOR

ASTROPHYSICS

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*“Knowledge Discovery is the task of processing and analyzing astronomical datasets with the aim of **extracting new knowledge**. This endeavor spans multiple disciplines including **visualization, data access and exploration, machine learning, statistical methods and workflow orchestration.**”*

Long term KD-IG goals

Any future version of the whole *body* of IVOA standards, services and tools that disregard KD-based use cases and requirements will represent **a missed opportunity to facilitate innovative astronomical research and keep the VO relevant.**

Short term KD-IG goals

- ⊕ **Set priorities**
- ⊕ **Collect new ideas**
- ⊕ **Set goals and *modus operandi***

Set priorities

- ⦿ Making sure that data mining algorithms can run on non-tabular data types
 - ⊕ Polymorphic data access
 - ⊕ Support DM-based labeling of data
- ⦿ Handling uncertainties and probabilistic measurements (pdf)
- ⦿ Making datasets and their metadata understandable, interpretable and actionable by (automated?) data mining agents
 - ⊕ Provenance annotations
 - ⊕ DM-specific annotations
 - ⊕ Domain-specific annotations

Collect new ideas

- Stay abreast of new developments in KD-relevant methods
 - ⊕ Solicit a robust range of contributed talks for KD-IG sessions
 - ⊕ Aim for a dynamical IG membership
- Make “data projects” aware of our existence
 - ⊕ Invite members of interesting projects to speak at KD-IG sessions
 - ⊕ Planning for a future IVOA InterOp plenary session with significant intra-IVOA and community involvement

Set goals and *modus operandi*

Balance between **what we would like to do** vs **what we can realistically achieve**

- ⊙ Document interests, needs and recommendations
 - ⊕ Regular, focused, “in-between InterOps” meetings
 - ⊕ Drafting an *implementation note*
 - ⊕ Document one or a few related recommendations in a *note*

- ⊙ Keep the ball rolling
 - ⊕ Enhance communication (Slack channel #kdd)
 - ⊕ Lobbying activity within the IVOA

<Insert classical Uncle Sam's
"We want you" image>

If you are interested in being the V Chair for KD, please send a note to the IVOA Executive comm.