

# Knowledge Discovery Interest Group

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CENTER FOR

ASTROPHYSICS

HARVARD & SMITHSONIAN

# KD-IG session@2021FallInterOp

- ⊕ Three interesting talks about relevant KD scientific applications and methodologies
  - ⊙ A. Mahabal: *Data Sheets and Model Cards*

An approach to standardized description of datasets and models that can be used as benchmarks for KD applications in astronomy and can favor data fusion.
  - ⊙ P. Skoda: *SDSS redshift prediction based on Bayesian Deep Learning*

Application of Bayesian deep learning technique which provides uncertainty estimations to the determination of spectroscopic redshifts
  - ⊙ R. Martinez-Galarza: *Harvesting outliers: data barriers to turn anomalies into discoveries*

Selection of anomalous objects from large astronomical datasets and the problem of interpretability when selection occurs in non-physical feature spaces
- ⊕ Open discussion regarding KD-IG priorities

## Reinforce 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)

## Collect new ideas

- ⊕ Stay abreast of new developments in KD-relevant methods
  - ⊕ Solicit a robust range of contributed talks for KD-IG sessions
  - ⊕ 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*

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

# <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 committee (or contact me if you want to know more before).

## Staying in touch

- ⊕ E-mail: [kdd@ivoa.net](mailto:kdd@ivoa.net)
- ⊕ Slack: [IVOA#kdd](#)