

Knowledge Discovery Interest Group

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* Facilitating the deployment and application of KD methods **where astronomical data can be found** is a crucial task

Goals

- ML-proofing existing and future science platforms
 - Are existing astronomy science platforms compatible with ML methods?
 - Investigate whether science platforms can access tabular and non-tabular data through VO interfaces.
 - Building libraries of well-established pre-trained models and integrating them in science platforms.

- Collecting resources for the "ready to ML in astronomy" kit
 - Library of datasets: collecting data for standard DM application for testing and benchmarking of KD models ("Iris datasets" for astronomy)
 - Looking at different "astronomy data challenges": can they represent the starting point for the library of astronomical datasets?
 - Collecting and describing methods for standardization/normalization of data used in astronomy, with reference data to test different implementations of the methods

A Target of opportunity for KDIG

Artificial Intelligence-powered chatbots

The sudden rise to fame of a family of powerful, rapidly improving technologies based on ML, capable of generating human-like text, that show promises of potentially disruptive impact in several fields, including scientific research

- ◇ The basics of the ML methods at the core of these tools
- ◇ Practical applications to astronomical research
- ◇ Commercial (gargantuan, general-purpose, available now) vs open (agile, curated, in the making) tools
- ◇ Extension to non-language models

“We don’t know exactly where we are going, but we are going somewhere”

KD-IG @2023 Spring InterOperability Meeting

KD-IG session: Tuesday 05/09, 11:00 AM (CEST)

- Sandor Kruk: *Exploring astronomy data archives at large scales using deep learning and crowdsourcing*
- Mini-session on generative language models and AI-powered tools
 - Y. Tao: *Foundation models for Astronomy*
 - A. Schaaff: *AI in querying astronomical data services*
 - R. Galarza-Martinez: *Intro to Transformers*
 - Ioana Ciucă: *Galactic ChitChat: Using Large Language Models to Engage with Astronomy Literature*
 - Adrian Damian: *Discover IVOA with ChatGPT*
 - □ Discussion about generative language models

Other (very) relevant sessions

- ■ Science Platforms sessions I and II
- ■ Grid and Web Services (GWS) Sessions I and II