Pavlos Protopapas @ Astroinformatics 2018 in Heidelberg - YouTube

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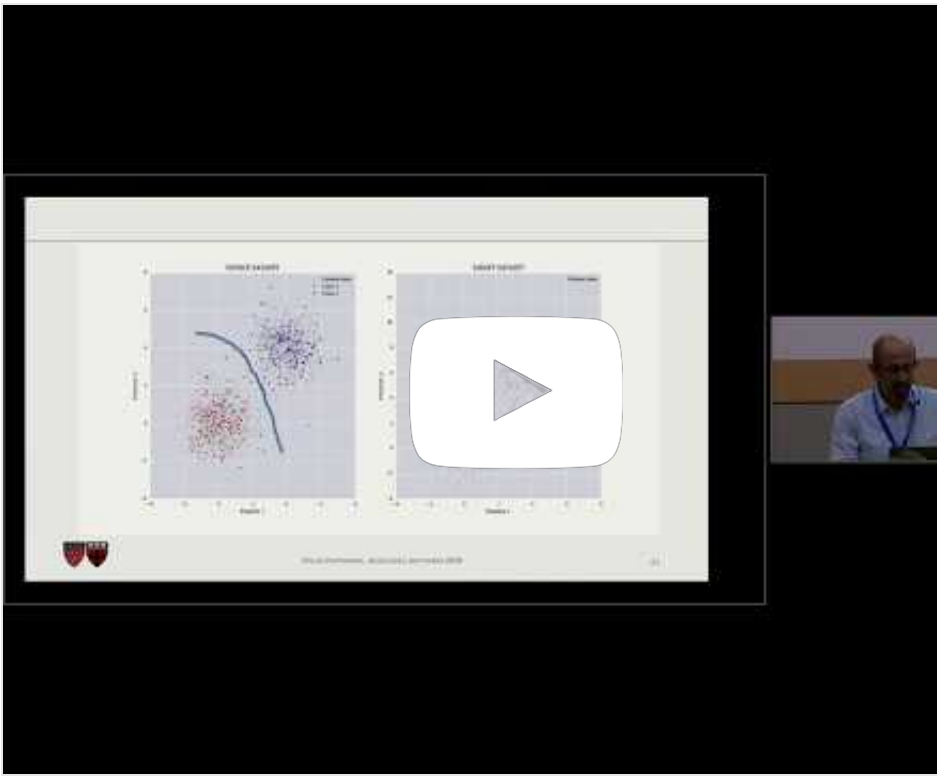

Description

Pavlos Protopapas talks about „Transfer Learning Methods for Astronomical Datasets" at the Astroinformatics 2018 in Heidelberg. Abstract of the talk: It is often expensive and time-consuming to obtain labeled examples. In such cases, knowledge transfer from and between related domains would

greatly boost performances, without the need for extensive labeling efforts. In this scenario, transfer and multi-task learning come in hand. In this talk, I will first present a Bayesian approach to transfer learning and then a deep variational autoencoder approach. The deep variational transfer learning is able to tackle all major challenges posed by transfer learning: different feature spaces, different data distributions, different output spaces, different and highly imbalanced class distributions, and the presence of irrelevant source domains. We test DVT on images and stars datasets. We perform both a quantitative evaluation of the model discriminative ability and qualitative exploration of its generative capacity. The international Astroinformatics 2018 conference took place in the Studio Villa Bosch, Heidelberg, from September 3–7, 2018. Scientists from all over the world met to exchange views on the newest and most successful methods of machine learning in an effort to advance the exploration of the Universe. The conference was organized by HITS researchers Dr. Kai Polsterer, Antonio D'Isanto, Erica Hopkins, and Dr. Nikos Gianniotis (all from the Astroinformatics group at HITS – Heidelberg Institute for Theoretical Studies) in cooperation with Prof. Joachim Wambsganss (Heidelberg University) and Dr. Coryn Bailer-Jones (Max Planck Institute for Astronomy). The Astroinformatics – which is devoted to the scientific exploitation of the fast-growing volumes of data in astronomy – is one of the most important events in this field. At the conference, scientists discussed topics including novel database systems, visualization and augmented reality, artificial intelligence, and the reproducibility of research results. The conference is hosted at a different location all around the world once every year. In 2018, it took place in Germany for the first time. Conference page: https://astroinformatics2018.h-its.org/