Contribution ID: **178**   Type: **Oral Presentation**

[INVITED] Building Robust and Impactful Machine Learning Models in Astronomy

Tuesday, 9 July 2024 09:00 (40 minutes)

Machine learning has rapidly become a tool of choice for the astronomical community. It is being applied across a wide range of wavelengths and problems, from the classification of transients to neural network emulators of cosmological simulations, and is shifting paradigms about how we generate and report scientific results. At the same time, this class of method comes with its own set of best practices, challenges, and drawbacks. In this talk, I will highlight a set of recommendations we recently devised for implementing and evaluating machine learning research in astronomy in a way that ensures the accuracy of the results, reproducibility of the findings, and usefulness of the method. The rapid pace of development in machine learning research means that these practices and challenges will likely be in flux for years to come. While we have collected what we consider to be key features of a thoughtful, nuanced approach to machine learning in astronomy, I envision this talk as a starting point for further discussion and would like to invite the participants of this meeting into a conversation about these recommendations, where they fall short and where they might evolve in the future.

Presenter: HUPPENKOTHEN, Daniela

Session Classification: Past and future multiwavelength all-sky surveys