

Statistical Learning with Imprecision

Context In this session, we are interested in learning situations where imprecision, or indecision, plays a key role in the data analysis process. This may be due to partial data whose missingness process is atypical, to the need of providing robust conclusions in case of partially specified probabilities, etc. We

welcome contributions of theoretical, methodological and applied nature in which imprecision is processed explicitly. This imprecision may occur in the data themselves, in the model or in the predictions produced by the model.

Topics In this special session, we would therefore like to attract contributions dealing with the following issues, among others:

Cautiousness in predictions and models

Recent techniques such as **conformal predictions** or **imprecise probability theories** (belief functions, possibility theory, credal sets, ...) produce cautious predictions or models that are set-valued. We would be interested to discuss such techniques, their latest development and how they can be compared (theoretically, computationally, practically, ...)?

Data imprecision and partial labels Dealing with partially specified data or labels often requires adapted methods, making different assumptions (from none to MAR, for instance) about the observation process. We welcome discussion about approaches dealing with such issues, such as **superset learning**, **EM extensions**, **partial identification**, ...

Imprecision/cautiousness: usefulness While providing a cautious prediction or model (as set of classes, for instance) may be interesting in itself, in many instances, producing precise inference is still the final goal. In this regard, we highly welcome contributions indicating how **im-**

precision or cautiousness can be instrumental in learning and statistical problems, e.g., **data imputation**, **semi-supervised learning**, **active learning**, **transfer learning**, etc. By instrumental, we understand a measurable gain compared to more classical approaches.

Instructions Submissions (abstract only) should follow the ECDA guidelines:

http://groups.uni-paderborn.de/eim-i-fg-huellermeier/ecda2018/call_for_papers.php

Important dates

1 April 2018 — abstract submission

30 April 2018 — notification of acceptance

4 July - 6 July 2018 — conference

Organizers Any question or request related to this special session can be addressed to one of the organizers:

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