Call for Paper: Feature Issue on Fair and Explainable Decision Support Systems

Guest Editors:

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Motivation:

Algorithmic decisions are nowadays being employed on a daily basis. They are carried out by mathematical models trained using machine learning techniques on data collected from past experiences. Well-known examples include decision support systems for loan grants, terrorism detection, prediction of criminal recidivism, and many other activities with social and economic impact on society. While ML-based decision systems generally attain good performance, they can be complex and opaque, not to mention that they are not infallible. This lack of transparency, together with the increasing evidence of biases and unfair outcomes in those systems, has raised several concerns within the scientific and legislative realms.

Most of the notions of fairness focus on the outcomes of the decision process, and they are inspired by several anti-discrimination efforts that aim to ensure that unprivileged groups (e.g. racial minorities) are treated fairly. As such, the problem of improving algorithmic fairness can be formulated as an optimisation one. However, certain dimensions of fairness do not fit into this setting, e.g., fairness through unawareness and counterfactuals. This raises a number of challenges for theorists, researchers, and practitioners.

This brings us to the underlying motivation of this Feature Issue that aims at collecting contributions that focus on the various dimensions of algorithmic fairness, both from foundational and application perspectives. We therefore target works ranging from novel theoretical frameworks to model fairness (and tackle unfairness) in the general case, to the formalization of fairness issues in different applications (from decision making, operations research, resource allocation and policy making) using empirical approaches. Contributions dealing with different data-types, e.g., tabular, sequential, textual and, other complex data such as graphs, are particularly welcome.

Contents:

We welcome contributions (i) in the form of state-of-the-art original research papers, (ii) in the form of position papers that establish bridges between different frameworks, and (iii) discussion papers that highlight emerging trends in the topics outlined above. New methodologies, algorithmic tools, and implementations are also in the scope of this Feature Issue.

Schedule:

Prospective authors can contact the guest editors with an extended abstract (1.5 pages max, A4 size) of a proposed paper via e-mail (miguel.couceiro@loria.fr, luis.galarraga@inria.fr) before submitting the full paper. Submission of full papers to the Feature Issue is through the electronic submission system: www.editorialmanager.com/ejdecp, selecting article type SI:Fair-Decisions.

Important dates:

- August 31, 2021: Extended abstract (at least, submission intention)
- December 15, 2021: Submission of full papers
- March 31, 2022: Notification (1st round)
- June 30, 2022: Revision due
- Summer 2022 Publication of Feature issue