

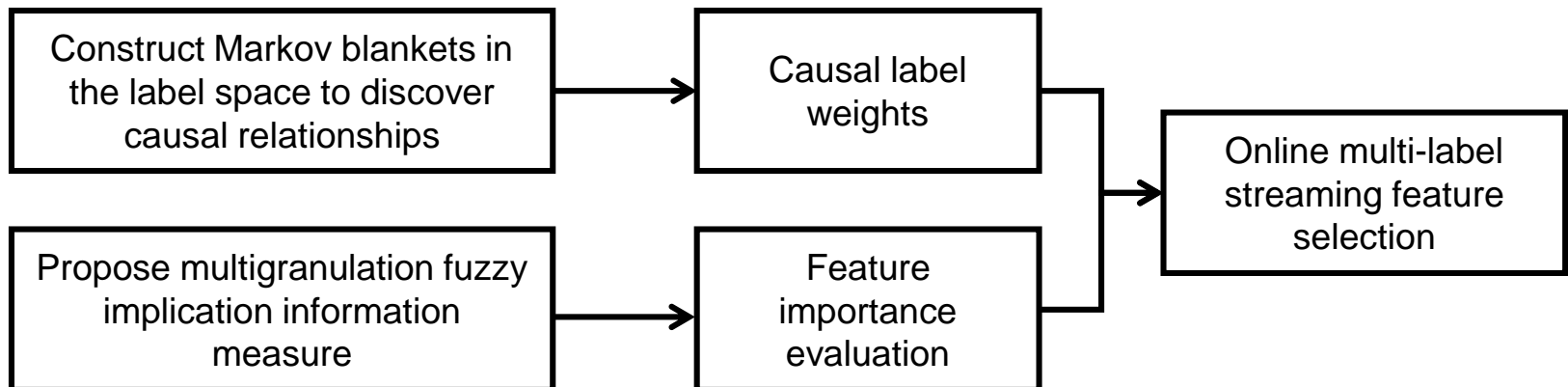
Online multi-label streaming feature
selection by label causal relationships
and multigranulation fuzzy implication
information

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Problems & Ideas

- Problems of online multi-label streaming feature selection
 - Existing methods typically rely on simple label co-occurrence to model dependencies, failing to capture deeper causal relationships among labels.
 - They evaluate features at a single granulation level, which is inadequate for characterizing discriminative information in complex, multi-source environments.
- Ideas: By integrating causal discovery with multigranulation fuzzy implication information measure that fuses multigranulation information to enhance feature selection.



Main Contributions

- Contributions:
 - Causal label weighting via the Markov blanket is introduced to enhance interpretability and selection accuracy.
 - A new multigranulation fuzzy implication information measure is proposed for efficient multi-granular information fusion.
 - An effective OMSFS framework is designed, incorporating rigorous criteria for streaming feature evaluation and supported by extensive validation demonstrating superior performance.

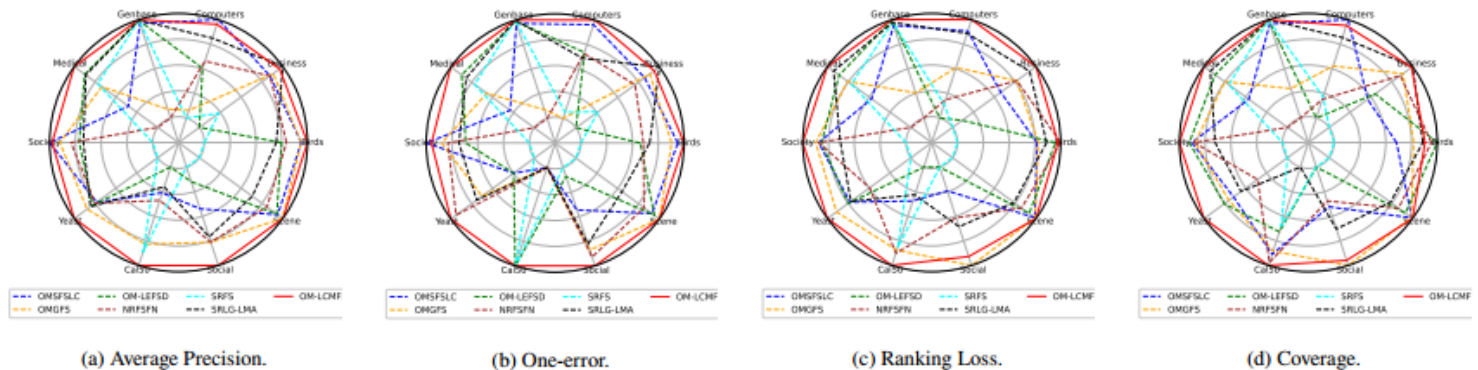


Fig. 1 Spider web diagram under different evaluation metrics.