Diagrammatic Reasoning, Formally

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Abstract

Modern proof assistants make it possible to verify theorems, but often makes it harder than with pen and paper. This is especially true in domains where proofs are best depicted using diagrams. For instance, confluence diagrams in rewriting theory, commuting diagrams in category theory, or string diagrams in monoidal categories. By using various tools and techniques to solve well-defined classes of goals, infer appropriate data, or perform high-level reasoning steps [2, 1], I will show how to obtain robust and elegant proof scripts in these application domains [3, 4].

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Category Invited Talk

Supplementary Material *Software*: `https://perso.ens-lyon.fr/damien.pous/string-diagrams/`
Software: `https://perso.ens-lyon.fr/damien.pous/ra/`

References

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