

Doctrine specific ur-algorithms

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Various constructions of categories have a universal property expressing the freeness/initiality of the construction within a specific categorical doctrine. Expressed in an algorithmic framework, it turns out that this universal property is in a certain sense a doctrine-specific "ur-algorithm" from which various known categorical constructions/algorithms can be derived in a purely computational way. This can be viewed as a categorical version of the Curry-Howard correspondence to extract programs from proofs.

Keywords

category theory, doctrines, left adjoints

References

[1] SEBASTIAN POSUR, On free abelian categories for theorem proving. *Journal of Pure and Applied Algebra* **226**(7), Paper No. 106994, 19 (2022).