TOPOLOGY SEMINAR

Monads and their Algebras

By

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Abstract: We define monads, showing the relation with adjunction. We define algebra over monad, with examples and prove that every monad is defined by its algebras. We will define the Kleisli category of a monad and explain the comparison Theorem for the Kleisli construction. In addition, we will discuss Theorem 5.6.5 from the reference, the proof and some applications. During the talk our basic example will be the probability monad over a semiring, which allows us to generalize the convex set notion.
Reference: Chapter 5 from “Category Theory in Context” by Emily Riehl
Other references: Chapter 6 from “Categories for the working mathematician” by Mac Lane Section 5 from “Notes on Category Theory” by Paolo Perrone

Date: Monday, September 26, 2022
Time: 13:30
Place: SA141 Mathematics Seminar Room