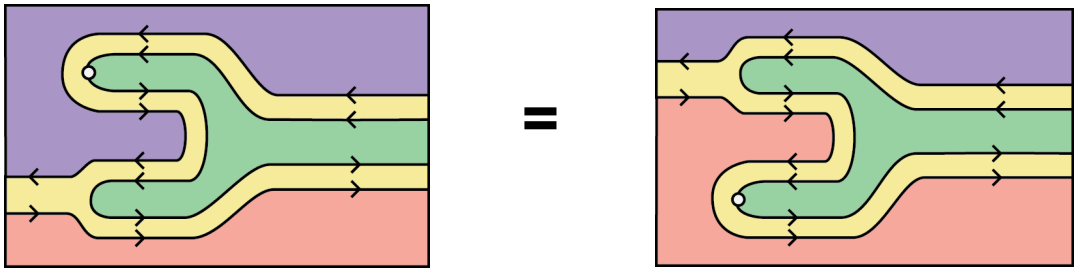
David Jaz Myers ‘17

From: Florida

Advisor: Jack Calcut

Other interests: Philosophy, Gender/Queer Theory

String Diagrams for Proarrow Equipments



String diagrams are a two dimensional language for dealing with tensors and their algebra. They are an abstracted version of Feynman's famous diagrams, and apply in a wide variety of situations both in and apart from physics. Instead of writing chains of equations, string diagrams let you manipulate strings topologically. Any topological change in a string diagram gives an equal answer, so complicated calculations can be computed easily and intuitively.

In this project, I generalize string diagrams to apply to *Proarrow Equipments*, the abstract algebras of functions and relations. Equipments lie at the heart of formal and enriched category theory, two broad and abstract fields which simultaneously generalize category theory, order theory, homotopy theory, and metric geometry. I hope that my diagrams can make calculations in these fields easier to keep track of, and more intuitive to use.