Topology Seminar

David Spivak

of MIT will be speaking on

Categorical informatics

on September 20 at 4:30 in
MIT Room 2-131

In this talk I will give a brief survey of what I call "categorical informatics," which is the study of information and communication from a category-theoretic perspective. In order to begin such a study, one must ground it in something concrete. To that end, I'll explain a simple categorical model of databases, which are real-world store-houses of organized information.

I will then discuss information transfer between databases and move on to define a more general notion of communication networks. Briefly, a communication network is a simplicial complex (of interacting groups) equipped with a sheaf of databases (common languages) on its simplices. I will show how this same structure can be pared down to give a categorical model for combining information obtained from various sources. I'll end by showing some interesting consequences of the topological nature of this model.