Quantum Computing Seminar

Introduction to Category Theory

By

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Abstract: We are interested in this seminar series in understanding how category-theoretic tools can be applied to the study of quantum information theory, including a definition of the appropriate categorical setting for categorical quantum mechanics (CQM); studying common quantum information protocols from this perspective; as well as how categorical point of view may shed light on questions in the foundations of quantum theory. Though category theory often feels abstruse when first encountered, it rests upon a few simple definitions which draw on commonalities in mathematical arguments. In this preliminary talk, we present some of the basic definitions of category theory, and illustrate them through numerous examples. To wit, we will discuss categories, functors, natural transformations. The talk will conclude with a discussion of universal properties and (co)limits, with a particular emphasis on (co)products.

Date: Friday, February 9, 2024
Time: 14:00-15:30
Place: SA141 - Mathematics Seminar Room & ZOOM

To request the event link, please send a message to selman.ipek@bilkent.edu.tr