

## Kan Extensions In Enriched Category Theory

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Kan extension - Wikipedia

Kan Extensions in Enriched Category Theory Authors. Eduardo J. Dubuc; Series Title Lecture Notes in Mathematics Series Volume 145 Copyright 1970 Publisher Springer-Verlag Berlin Heidelberg Copyright Holder Springer-Verlag Berlin Heidelberg eBook ISBN 978-3-540-36307-1 DOI 10.1007/BFb0060485 Softcover ISBN 978-3-540-04934-0 Series ISSN 0075-8434 Edition Number 1

Kan Extensions in Enriched Category Theory | Eduardo J. ...

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Kan extensions in Enriched Category Theory | SpringerLink

The general formulation of pointwise Kan extensions in general enriched contexts is in terms of weighted (co)limits. In the case that the codomain category is (co)tensored these may be expressed equivalently in terms of (co)ends.

Kan extension in nLab

to define limits and colimits of diagrams valued in an 1-category. Thus, pointwise Kan extensions can be used to extend this notion to non-cartesian closed 1-cosmoi, such as sliced1-cosmoi or the1-cosmoi of Rezk objects. We introduce initial and final functors ... enriched category whose mapping spaces  $\text{map}(A,B)$  are all quasi-categories that is ...

KAN EXTENSIONS AND THE CALCULUS OF MODULES FOR -CATEGORIES

This is part 28 of Categories for Programmers. Previously: Kan Extensions. See the Table of Contents. . A category is small if its objects form a set. But we know that there are things larger than sets. Famously, a set of all sets cannot be formed within the standard set theory (the Zermelo-Fraenkel theory, optionally augmented with the Axiom of Choice).

Enriched Categories | Bartosz Milewski's Programming Cafe

Beyond this, the work in 5.11–5.13 on Kan extensions along a non-fully-faithful dense functor seems to be quite new even when  $V = \text{Set}$ , as is its application in 6.4; while the whole of Chapter 6 is new in the enriched setting.

BASIC CONCEPTS OF ENRICHED CATEGORY THEORY

and a right adjoint, called respectively the left and the right Kan extension of  $F$ . Isbell adjunctions and Kan extensions have also been considered for categories enriched over a symmetric monoidal closed category [Bor1994, DL2007, Kel1982, KS2005, Law1973, Law1986]. In this paper, it is shown that for a small quantaloid  $Q$ , each  $Q$ -distributor  ${}^*A$  !

Introduction - Lili Shen | Thinking categorically

In particular, taking  $K$  to be  $\mathbb{Z}$  (the ring of integers), a ringoid (or  $\text{Ab}$ -enriched category) is a category enriched over  $\text{Ab}$ . A (Lawvere) metric space is a category enriched over the poset  $([0, \infty], \geq)$  of extended positive real numbers, where  $\otimes$  is  $+$ . An ultrametric space is a category enriched over the poset  $([0, \infty], \geq)$  of extended positive real numbers, where  $\otimes$  is  $\max$ .

enriched category in nLab

In category theory, a branch of mathematics, an enriched category generalizes the idea of a category by replacing hom-sets with objects from a general monoidal category. It is motivated by the observation that, in many practical applications, the hom-set often has additional structure that should be respected, e.g., that of being a vector space of morphisms, or a topological space of morphisms.

Enriched category - Wikipedia

Theory and Applications of Categories, Vol. 30, No. 5, 2015, pp. 86{146. ALGEBRAIC KAN EXTENSIONS IN DOUBLE CATEGORIES SEERP ROALD KOUDENBURG Abstract. We study Kan extensions in

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KF are respectively the left and right Kan extension of  $F$  along  $K$ . Isbell adjunctions and Kan extensions have also been considered for categories enriched over a symmetric monoidal closed category [Bor94b, DL07, Dub70, Kel82, KS05, Law73, Law86, Rie14], and will be outlined in Chapter 2. 1.2 Adjoint morphisms in a bicategory

Adjunctions in Quantaloid-enriched Categories

In Section 2 we define Kan extensions and give some basic examples. We will show how limits and colimits are special cases of Kan extensions, and how, when all the extensions exist, they define adjoint functors. In Section 3 we give limit and colimit formulae for Kan extensions, helping to find conditions for when Kan extensions will exist.

All Concepts are Kan Extensions: Kan Extensions as the ...

The Cauchy completion of a category is the universal extension of that category in which all idempotents split. When we move from ordinary categories to enriched categories, it turns out that the appropriate notion of Cauchy completion is given by replacing "splittings of idempotents" with "absolute colimits".

The Kan Extension Seminar - Mathematics

Enriched Categories. Normally, we like to think that there is a set  $\text{Hom}(A, B)$  of arrows between any two objects  $A$  and  $B$  in a category  $\mathcal{C}$ . Composition then can be packaged up into a function  $\text{Hom}(A, B) \times \text{Hom}(B, C) \rightarrow \text{Hom}(A, C)$ , satisfying an associativity condition. The identity is an element ...

Enrichment and its Limits | The n-Category Café

Beyond this, the work in 5.11–5.13 on Kan extensions along a non-fully-faithful dense functor seems to be quite new even when  $V = \text{Set}$ , as is its application in 6.4; while the whole of Chapter 6 is new in the enriched setting.

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Kan Extensions In Enriched Category Theory

$V$ -category,  $V$ -presheaves on a  $V$ -category. Kan extensions of enriched functors, Morita theory for  $V$ -categories, and so on. Monoidal categories are precisely one-object bicategories [Bénabou, 1967]. It is thus natural to ask how far  $V$ -category theory can be generalized to  $W$ -category theory, for  $W$  a general bicategory.