

**Encoding (combinatorial) structures and their refinements -
FI, Feynman and beyond**

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Together with my student Ben Ward, we introduced the concept of Feynman categories which provides a framework for (combinatorial) structures and objects exhibiting the operations encoded by them in the form of functors out of these categories. The category FI is an example of such a Feynman category. More generally the structure of a Feynman category entails several different secondary structures that can be used for further analysis. We will present the framework and provide basic examples. Following this we give a selection of further constructions and newer results, including applications to moduli spaces, physics and logic. Wrapping up we will speculate about possible links to stability structures.