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Eswaran Subrahmanian* (sub@cmu.edu), ICES/Engineering Research Accelerator, Carnegie Mellon University, 6141 Scott Hall, 5000 Forbes Avenue, Pittsburgh, PA 15213. *Brakes: An example of applied category theory.*

Engineering and design are filled with diagrams and graphical models which specify different aspects of the products and processes of interest. Examples include port graphs for system architectures, flow charts for process planning, Bayes networks for causation and class diagrams for logical/semantic structure. One goal for applied category theory is to unify these and other perspectives through expression in a common categorical vocabulary (operads, monoidal categories, sketches). This talk will present a case study in this approach, focused on the evolution of vehicle braking systems. (Received September 03, 2019)