

Abstract

The thesis studies proof nets of multiplicative linear logic, objects that were introduced by Jean Yves Girard in his seminal paper [Gir87]. A proof net is a graph - in the mathematical sense - that represents a proof. Although, not all graphs represents a proof therefore a natural question arises: Given a graph what is a process that decides whether it is a proof net or not? Such a process is called a correctness criterion, it is known that many of them exists, the most famous one is due to Laurent Regnier and Vincent Danos [DR89].

Furthermore the class of graphs comes with a notion of computation, thus one can wonder what the correctness criterion means with respect to computation. This is the object of the thesis, to this end we rely on an article of Denis Bechet [BEC98] showing that correctness is equivalent to good behavior with respect to cut elimination. We offer a re-working using modern tools from graph theory and of ludics. I was supervised by Prof. Lorenzo Tortora de Falco.

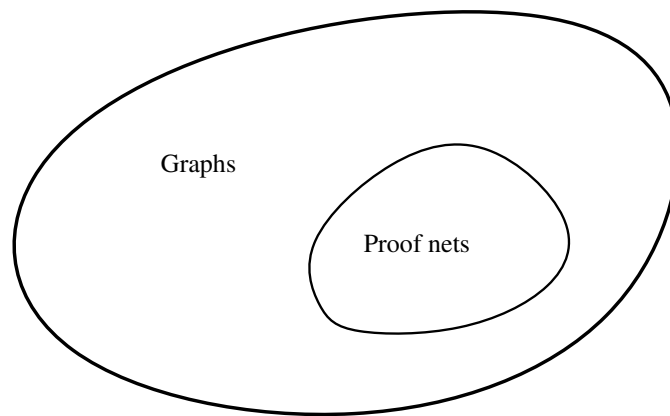


Figure 1: Simple representation of the situation for proof nets, they belong to a wide class of graphs and some of the graphs are not proof nets, i.e. they don't represent a proof.

Bibliography

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