CLASSICAL REALIZABILITY

DANNY GRATZER

1. An Overview of Realizability

In this note I'd like to talk about a realizability model for classical logic, but it's worth writing down a few thoughts on how realizability in general works to make sure that we're on the same page.

Realizability is a technique for understanding a logic from a computational point of view. Rather than studying the proofs in a logic (proof theory) we define a system of computation and model propositions using collections of terms in that system. This technique dates back to Kleene's model of intuitionistic logic. The primary benefit of a realizability treatment is that it's an explanation of what the computational content of a theorem is. One interesting consequence for doing this for classical logic is to see that a computational interpretations aren't limited to constructive logics (just nice ones).

2. A Judgmental Formulation of Classical Logic

3. A Computation System

4. The Realizability Model

5. Soundness and Completeness