

# Probabilities in Functional Logic Programs

Some slippery ideas - May 2006

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## Abstract

We analyse how probabilities are understood in Functional Logic Programs, trying to use them as mimetic models.

**Keywords:** functional logic programs, probabilities, ROC curves.

## 1. Introduction

Probabilities have been introduced in many declarative languages, giving proposal such as Probabilistic Logic Programming (citation needed) or Stochastic Logic Programming (citation needed).

In this note we explore the possibility of including probabilities in functional logic programs, their induction system and their evaluation using probabilistic ROC curves. One basic idea is to use functional logic programs as representation languages, by using the mimetic technique (Domingos, 1997, 1998; Ferri, Hernandez-Orallo, & Ramirez-Quintana, M.J. 2002; Estruch, Hernández-Orallo & Ramírez, 2003; Blanco, Hernández-Orallo & Ramírez, 2004), which generates a model which is similar to the initial model (oracle) but contextualized to the new cost.

## 2. Inductive Functional-Logic Programming

Inductive Functional Logic Programming is an extension of inductive logic programming. It was developed by Hernández-Orallo & Ramírez 1998, Hernández-Orallo & Ramírez 1999,

## 3. pROC Curves

pROC Curves are a way to extend ROC analysis to probabilistic situations (Ferri, Flach, Hernández-Orallo, Senad, 2005).

## 4. Conclusions

To be done.

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