Mês de: SETEMBRO 2012

SEMINÁRIO DE LÓGICA MATEMÁTICA

Dia 27 de Setembro (quinta-feira), às 17h, na Sala B3-01

Gold-Style Learning Theory: A Selection of Highlights Since Gold.

John Case
(University of Delaware, USA)

Abstract:

Discussed will be E. Mark Gold's 1967 model of child language learning and some of its extensions since 1967. Gold cited psycholinguistic evidence that, in learning a language L (modeled as a formal language), children don't need or use information about L's complement; they only need and react to data about the (finite) strings in L. Mathematically, as will be briefly explained, the resultant theoretical work has a different character than if the learner were presented the whole characteristic function of L.

Presented will be some motivated criteria of success developed since 1967 and some interesting mathematical constraints on this kind of learnability. The languages classes in the Chomsky Hierarchy are not learnable in the model of learning from only positive data about languages, a result depressing already to Gold. We'll present some positive results though and discuss how these may give hope. A modern take is that the possible and actual natural languages do not form a Chomsky Hierarchy class and may crosscut these in such as way as not to be subject to the mathematical constraints.

Children may be in sensitive to order of presentation of languages, and presented will be some local and global formal notions of order insensitivity together with theorems about their effects on learnability.

There is an empirically observed phenomenon in child cognitive development called U-Shaped Learning. It occurs in many domains including language development and features a behavioral sequence of: success, then failure, then success again. For example, a child in naturally learning English irregular verbs may, for the past tense of the irregular verb to speak, first use spoke, then use speaked, and, then, finally, use spoke again. Presented are some formal analogs of U-Shaped Learning together with theorems on how such U-Shaped Learning can enhance learning power.

If time permits, discussed will be some other learning criteria featuring plausible memory-limitations on the part of the learner.

Local:
INSTITUTO PARA A INVESTIGAÇÃO
INTERDISCIPLINAR
Av. Prof. Gama Pinto, 2
1649-003 Lisboa

HOSP.
SANTA
MARIA

Av. Prof. Gama Pinto

Entrada

ENTRECAMPOS