

Logic Reading Group

Schedule for Fall 2007

- Sep 18: First-order logic
 - Discussion leader: Dan
 - Readings:
 - Marker's "Model Theory: An Introduction", Chapter 1
 - Nerode and Shore's "Logic for Applications": "Predicate logic", part II
 - Some links Dan provided:
 - [http://en.wikipedia.org/wiki/Type_\(model_theory\)#Stone_spaces](http://en.wikipedia.org/wiki/Type_(model_theory)#Stone_spaces)
 - http://en.wikipedia.org/wiki/Stone_space
- Sep 25: Second-order/higher-order logic
 - Discussion leader: Alec
 - Readings:
 - Weyer's "Decidability of S1S and S2S"
 - Carpenter's "Type-Logical Semantics", Chapter 3
- Oct 2: Modal logic
 - Discussion leader: Aaron
 - Readings:
 - Goldblatt's "Logics of time and computation", Chapters 1,2,6
 - Fagin, Halpern, Moses, and Vardi's "Reasoning about Knowledge", Chapters 2,3
 - Links: modal logic types for distributed computation
 - <http://www.cs.cmu.edu/~tom7/papers/>
- Oct 16: Program logics (PDL, Hoare logics)
 - Discussion leader: Jesse
 - Readings:
 - Harel, Kozen, and Tiuryn's "Dynamic Logic", chapters 4,5,7
- Oct 23: Probabilistic logic
 - Discussion leader: Dan?
 - Readings:
 - Fagin, Halpern, Megiddo, "A Logic for Reasoning about Probabilities"
- Nov 6: Algebraic semantics
 - Readings:
 - Stone Duality chapter from Kozen and Panangaden lecture notes
 - Lemmon's "Algebraic Semantics for Modal Logics I" (Journal of Symbolic Logic, 31(1), 1966)
- Nov 13: Stone Duality for intuitionistic logic
 - Readings:
 - Morandi's [Dualities in Lattice Theory](#)
- Nov 20: Intuitionistic logic and the Curry-Howard isomorphism
 - Discussion leader: Aaron
 - Readings:
 - Sorensen and Urzyczyn's "[Lectures on the Curry-Howard Isomorphism](#)", Chapters 2,3,4.
- Nov 27: Cartesian-Closed Categories
 - Discussion leader: Dan
 - Readings:
 - Scott's "[Some Aspects of Categories in Computer Science](#)", sections 1-2.13
 - An [old talk of mine](#) on extracting a CCC semantics from the straightforward set-theoretic semantics of the simply typed lambda calculus.
- Dec 4?: PER models of polymorphic lambda calculus, and/or realizability
 - Discussion leader: ?
 - Readings:
 - Phoa's "[An introduction to fibrations, topos theory, the effective topos and modest sets](#)", chapter 4 mostly.