Programming, Logic, and Semantics

Common Theme: understanding computation with rigorous mathematics

Wide range from theory to application:

- logics and complexity
- abstract models of computation
- development and use of interactive theorem provers and automatic proof procedures
- semantics and design of programming languages and multiprocessors
- verification and analysis techniques for hardware and software
- semantics for networking

new theories, tools, and languages

Meetings: Semantics Lunch, ARG Lunch, Logic & Semantics Seminar, CPRG Seminar

Potential Supervisors

- Anuj Dawar
  logic and complexity
- Marcelo Fiore
  category theory and semantic models
- Glynn Winskel
  concurrent games and strategies as replacement for domain theory
- Sam Staton
  programming language semantics – algebraic theory of effects
- Andrew Pitts
  dependent types in nominal sets; provers with names and binders
- Larry Paulson
  automated logic tools; formalisation of mathematics
- Mateja Jamnik
  automated reasoning and mechanisation of “informal” human reasoning
- Mike Gordon
  automated reasoning applied to hardware and software verification
- Magnus Myreen
  automated reasoning applied to systems software verification
- Peter Sewell
  semantics for mainstream systems and PLs – multiprocessors, C concurrency,...
- Alan Mycroft
  programming languages, type systems, program analysis and compilation
- Tim Griffin
  semantics and verification for networking