Motivation

RADICAL is a workshop on databases and programming languages, with an emphasis on connections between databases and recent advances in type systems and logics, especially dependent type systems incorporating data constraints. We aim to cover significant recent developments in directions including (but not limited to) the following:

- Language-integrated query mechanisms transform code in typed programming languages into forms suitable for efficient execution by relational database back-ends. Examples include the use of monads, pioneered in Haskell, in systems such as Microsoft LINQ, Links, and Ferry. Another example is SGL, a declarative language for massive multi-player games, which compiles to efficient relational queries.
- Grammars, context free or regular, can be seen as types, and hence allow textual data to be imported into typed data models (as in PADS, various XML systems, and Microsoft's M Grammar).
- Information flow type systems, developed in the area of language-based security, are starting to be applied to database systems, for example, to help track data provenance, confidentiality, and integrity.
- Systems of dependent types including data constraints (as in eg Z, VDM, etc) have long been able to express database integrity constraints, but with recent advances in automation (eg SMT solvers) typecheckers can now verify statically that queries and updates respect these constraints.
- The dream of verified software stacks is starting to come true, thanks in no small part to advanced type systems found in interactive proof assistants. Recent work on verified implementations of database systems starts to address the correctness question for database implementations.
- Workflow and database systems are essential components of many enterprises, but often have difficulties interoperating. Ideas such as temporal logic from the verification community are being imported into databases to help monitor and verify the interactions between workflows and databases.
- Finally, according to many metrics SQL is not just the most successful declarative language of the 1970s but of all time. But SQL is indeed a creation of the 1970s and since then research on declarative languages and type systems in particular has made much progress. Many researchers share the dream of eventually replacing SQL with a higher-level, safer, easier-to-use database programming language. We see the research directions covered by RADICAL 2010 as steps toward this dream.

Call for Speakers

We are thrilled to announce that the following leading researchers have agreed to speak at RADICAL 2010:

- Peter Buneman, University of Edinburgh
- Greg Morrisett, Harvard University
- Philip Wadler, University of Edinburgh

And we're delighted that after an initial round of personal emails, participants and speakers include Véronique Benzaken (University of Paris Sud 11, LRI), Gavin Bierman (Microsoft Research), Giuseppe Castagna (CNRS and University of Paris 7), James Cheney (University of Edinburgh), Adam Chlipala (Impredicative LLC), Kathleen Fisher (AT&T Labs - Research), Nate Foster (Princeton University), Giorgio Ghelli (University of Pisa), Tim Griffin (University of Cambridge), Torsten Grust (Universität Tübingen), Tony Hoare (Microsoft Research), and many more.
We seek presentations of the best work-in-progress from members of our community. To this end, contributions will not be refereed or published, so that authors are free to publish completed papers at refereed venues. We will collect presentation materials, such as PDFs of slides, and also links to draft papers.

As of mid-March, we are delighted and excited to have gathered a fairly full programme of 30 minute talks, and we have only a few slots left. We aim to have a late-afternoon session of lightning announcements of recent work, position statements, or provocations, so we hope to fit in everyone who wants to speak, either as a 30 minute or lightning talk.

If you'd like to speak at the workshop, all you have to do is notify the Organising Committee (mail adg at microsoft.com) as soon as possible, please, and no later than April 1. Please include title and short abstract.

**Important Dates**

- April 1: Deadline for remaining speaking slots at RADICAL 2010
- April 9: Deadline for reserving your hotel room and registering to attend RADICAL 2010.
- May 9: Drinks on Sunday evening
- May 10: Day 1, RADICAL 2010, MSR Cambridge (full day, with college dinner)
- May 11: Day 2, RADICAL 2010, MSR Cambridge (full day)

**Registration and Local Arrangements**

There will be a registration fee of approximately £75 to cover the costs of lunches and the dinner at Downing College on May 10. Details of how to book accommodation and register will appear here in due course. We have a block of rooms reserved at the Arundel House, a traditional English hotel on the banks of the River Cam.

Thanks to generous sponsorship from Microsoft Research, we have some funds available to subsidise participants, particularly students; just contact us to apply for this support.

Cambridge is a beautiful medieval university town, a short train ride north of London. RADICAL takes place in the Roger Needham Building, named after a pioneer of logics for security, and home to Microsoft's European research laboratory.

We are working to gather a diverse and stimulating group of researchers to make being in Cambridge this May for RADICAL a lot of fun!

**Organising Committee**

- Andrew D. Gordon (convenor), Microsoft Research
- David Langworthy, Microsoft Corporation
- Philip Wadler, University of Edinburgh

**Sponsor**

RADICAL 2010 is sponsored by Microsoft Research.