

Basic Research in Computer Science

The Danish National Research Foundation was established in 1991 in order to enhance Denmark's research development capability. This objective is to be reached by funding unique Danish research at the international level. The Foundation presently funds 23 research centres, among them BRICS.

BRICS, a Centre for Basic Research in Computer Science, is funded by the Danish National Research Foundation for the period 1994-1998. Its aim is to establish in Denmark important areas of basic research in the mathematical foundations of Computer Science, notably Algorithmics and Mathematical Logic. These are areas of great international significance. The Centre is to develop the areas as a joint effort between the theoretical Computer Science groups at University of Aarhus and Aalborg University, with dissemination to other Danish researchers as an important goal. The objective is to attract mainly foreign research experts, contributing to the research efforts of the Centre and to the training of young Danish researchers. The research plan is based on a commitment to develop Algorithmics and Logic integrated with existing strong activities in Semantics of Computation, using a combination of long-term efforts and a number of short-term, intensive programmes, within carefully chosen scientific themes. Organisationally, BRICS is an autonomous centre with its own management, and yet with its activities strongly integrated in the existing infrastructure and student environments at the two universities.

The central role of BRICS is to be a centre of expertise in the areas of Logic, Algorithmics and Semantics. Realisation of this aim will take advantage of involvement and contacts with researchers, projects and institutions internationally. BRICS will

- attract researchers of high calibre,
- produce academic materials, lecture notes; publications are to appear primarily in international journals and conference proceedings, but also in the Centre's own publication series,
- arrange/support workshops and summer-schools, and distribute their proceedings,

- train senior students and researchers,
- foster expertise of potential relevance to practice.

The academic materials produced by the Centre will include some prototype systems produced by or in collaboration with the kernel researchers. It is expected that results produced by the Centre will chiefly be used by other researchers in universities and industry.

Although the Centre's concern will be within basic research, its results and expertise are of potential relevance to practice; formalisms, logical systems and algorithms developed, or their limitations understood, should contribute to future developments in high-level programming language design, mechanised checking and derivation of correctness of computer systems, including parallel systems, as well as their efficiency.

Research Themes

In addition to the longer term research activities, it is intended to concentrate on research themes. One theme is planned per year, keeping close to the university semester structure when possible. Guests, seminars, lectures and workshops will be focussed around these activities. An aim is that each programme include a set of lecture courses lasting around two weeks, suitable both for graduate students and more senior researchers. Whenever appropriate these will be announced widely, for example, as summer-schools.

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