Preface

The **Adaptive Informatics Research Centre (AIRC, adaptiivisen informatiikan tutkimusyksikkö)** was nominated as one of the national Centers of Excellence (CoE) by the Academy of Finland for the period 2006 - 2011. It was financed by the Academy, Tekes, HUT/Aalto University, and Nokia Co.

The present report covers the activities of AIRC during the final two years 2010 and 2011. It concentrates on the research projects, but also lists the degrees and awards given to the staff. The achievements and developments of the previous four years have been reported in the Biennial Reports 2006 - 2007 and 2008 - 2009. The web pages of AIRC, `http://www.cis.hut.fi/research` also contain up-to-date texts.

During 2010 - 2011, the AIRC was operating within the Department of Information and Computer Science (ICS), belonging to the new School of Science of Aalto University. Professor Erkki Oja was the director of AIRC, and Professor Samuel Kaski was the vice-director, with Professors Olli Simula and Juha Karhunen participating in its research projects. In addition, 16 post-doctoral researchers, ca. 30 full-time graduate students, and a number of undergraduate students were working in the AIRC projects.

To briefly list the main numerical outputs of AIRC during the period 2010 - 2011, the Centre produced 5 D.Sc. (Tech.) degrees and 47 M.Sc. (Tech.) degrees. The number of scientific publications appearing during the period was 235, of which 66 were journal papers. Thus the number of papers increased by 33% from the previous two-year period. It can be also seen that the impact of our research is clearly increasing, measured by the citation numbers to our previously published papers and books, as well as the number of users of our public domain software packages.

A large number of talks, some of them plenary and invited, were given by our staff in the major conferences in our research field. We had several foreign visitors participating in our research, and our own researchers made visits to universities and research institutes abroad. In addition to the finances provided by the Academy of Finland, Tekes, and Aalto University, AIRC researchers managed to obtain a large number of external projects (e.g. EU Emime, EU MultilingualWeb, EU PinView, EU ERASysBio, EU NoE T4ME, EU NoE Pascal2, UI-ART, NOVAC, MultiBio, VirtualCoach). Many of these are going on still in 2012. The research staff were active in international organizations, editorial boards of journals, and conference committees, including the conferences MLSP 2010, ICANN 2011, WSOM 2011, ALT 2011, and DS 2011, which all were organized by the AIRC staff in Finland and chaired by AIRC senior faculty. Also, some prices and honours, both national and international, were granted to members of our staff. All these are detailed in this report.

The third and fourth meetings of the Scientific Advisory Board of AIRC were held on Feb. 2 - 3, 2010, and October 11 - 12, 2011, respectively. The final evaluation report written by the members of the Board, Professors Risto Miikkulainen and José C. Príncipe, was quite positive. It begins by stating that *"The Center of Excellence on Adaptive Informatics Research directed by Professor Erkki Oja is on par with the best centers in*

the world in the adaptive informatics and machine learning areas, primarily because of the principled formulation of the research questions, the thematic coherence of its research, quality and quantity of its scientific production and in the novelty of its contributions".

A highlight in summer 2011 was the decision of the Academy of Finland to finance a new Center of Excellence in Computational Inference (COIN) in the 2012 - 2017 CoE programme. The competition was even harder than before, with only 15 CoE's accepted for financing. COIN is partly building on the research agenda of AIRC. E. Oja is still the Director of COIN and S. Kaski the Vice-Director for the first three-year period, after which S. Kaski will move to the position of Director. COIN consists of some of the same groups that comprise AIRC, but with considerable additions from the ICS Department as well as from the University of Helsinki.

Erkki Oja   *Samuel Kaski*

Professor   Professor
Director,   Vice-Director,
Adaptive Informatics   Adaptive Informatics
Research Centre   Research Centre