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SERIOUS INNOVATION

In the Netherlands three well-known companies (Vroom & Dreesman (V&D), Drogisten Associatie (DA), and Macintosh) are in trouble since they did not innovate in time. They kept their well-established way of operating and adhered to their old fashioned business models. The ICGA does not want to make the same mistake.

So far, the ICGA has seen two major changes since the birth of the ICCA (International Computer Chess Association) in 1977. The first major change was in 2000 when the *ICCA Journal* (Chess) was redubbed into the *ICGA Journal*. The Triennial Meeting in Maastricht in 2002 confirmed the name change from ICCA into ICGA (International Computer Games Association).

The second major change was in 2014 when the ICGA gave their members the choice to receive the ICGA Journal either electronically or in paper version. However, the business model then was only partially adapted.

The third major change will happen in 2016 when the ICGA will begin a contract with IOS Press for the publication and distribution of the ICGA Journal. Moreover, as of January 1, 2016, Aske Plaat will be the Editor-in-Chief and I will be the co-Editor-in-Chief.

To anticipate on this innovation, we are honoured that the September 2015 publication will be a special issue on the Framework of Job-Level Algorithms, with emphasis on the games of Hex and Connect6. It is the second special issue of the ICGA Journal; the first one was on Ken Thompson (guest edited by Guy Haworth). This issue is guest edited by I-Chen Wu together with Ting han Wei. Both are also main contributors. Therefore the refereeing process has been overseen by the ICGA.

I have requested Wu and Wei to provide an introduction of their work. I consider this as part of the serious innovation envisaged above for 2016. In the next months, I welcome advice from our readership on future choices concerning the ICGA Journal policy.

Jaap van den Herik

A SPECIAL ISSUE ON JOB-LEVEL COMPUTING

As enthusiasts of computer game-playing programs, we are always excited to see new games and to develop new algorithms for them. Logically, the question arose: can we design a generic software development framework? Job-level search is then part of such a generic framework. The new framework was designed to handle the large variety of games and algorithms, with two main goals: (1) the efficient reuse of similar methods and (pre-)existing game-playing programs, and (2) the ability of easily adapting the (pre-)existing programs into distributed computing applications. The framework is particularly useful for large problems. They are first partitioned into smaller parts (or *jobs*), and then sent to the game-playing programs where its idiosyncratic specifics are calculated individually.

Since the inception of the framework in 2010, three search algorithms (proof number search, alpha-beta search, and upper confidence tree search) have been applied to job-level computing. The games Connect6, Breakthrough, Chinese Chess, Go, and Hex were the first five games to be analysed. The combination of applied algorithms and games meant that a new design of the software framework was necessary in order to accelerate and simplify the development of additional job-level applications. We are pleased to start this special issue by presenting the software framework in combination with a brief case study of three job-level applications under the title *Software Development Framework for Job-Level Algorithms* (pp. 131-148).

To demonstrate the benefits of moving to a distributed computing approach, and to showcase the job-level approach's versatility in reusing pre-existing game programs, we continue with *Solving Hex Openings Using Job-Level UCT Search* (pp. 149-163). The article describes the adaptation of the current computer Hex champion MOHEX and its associated solver to the job-level framework. The work is of particular interest since this is the first time that an externally developed program is used on our job-level software framework.

Thirdly, we provide one of the typical applications of the job-level approach in *Job-Level Algorithms for Connect6 Opening Book Construction* (pp. 164-178). We have found that the analysis of opening game positions is a fitting application for job-level computing since the job given to the framework is well-suited for large problems. The main obstacle to overcome still is identifying the best moves to play, especially in cases where the large problems cannot be handled adequately. The article lists various ways to determine the quality of moves, and uses the quality lists to construct opening books for the game of Connect6.

Ting han Wei
I-Chen Wu

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