RESEARCH CONFERENCE ON INFORMATION TECHNOLOGY

Pollack Mihály Faculty of Engineering and Information Technology, University of Pécs, Hungary

PhD-DLA Symposium October 24-25. 2011

Honoring Volume on Pollack Mihály Faculty of Engineering and Information Technology

Research conference on

INFORMATION TECHNOLOGY

HONORING VOLUME ON
POLLACK MIHÁLY FACULTY OF ENGINEERING
AND INFORMATION TECHNOLOGY

Abstracts of the

SEVENTH INTERNATIONAL PHD & DLA
SYMPOSIUM

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SEVENTH INTERNATIONAL PHD & DLA SYMPOSIUM

University of Pécs
Pollack Mihály Faculty of Engineering
and Information Technology

Edited by
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October 24-25, 2011
Pécs, Hungary

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Research conference on
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Time Table

October 24. (Monday)

8:00– 9:00	Registration
9:00– 9:30	Opening Session of the Conference
9:30–10:30	Scientific Session A
10:30–10:45	Conference Photo
	Exhibition of the Architectural Doctoral School
10:45–11:00	Café Break
11:00–13:00	Scientific Session B
13:00–14:00	Lunch
14:00–15:00	Opening Session of the Symposium
15:00–15:30	Café Break
15:30–18:00	Session 1
19:00–21:30	Conference Dinner, (Restaurant Cellarium)

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8:30–10:30	Session 2
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13:00–14:00	Lunch
14:00–16:00	Session 4
16:00–16:30	Closing Session of the Symposium

Genetic algorithms – Problem solving in architecture and urbanism

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Index Terms: genetic algorithm, evolution, population, fitness, evolving, modelling, solution, architecture, urbanism

To evolutionary-computation researches, the mechanisms of evolution come to be solutions for the most pressing computational problems in many fields. A Genetic algorithm (GA) is a form of evolution that occurs on a computer. These algorithms are appealing source of inspiration, searching methods that can be used for both - solving problems and modelling evolutionary systems. After describing the basic elements, functionalities and the most important theoretical foundations of GA, this paper will present how GA can be designed to solve different types of problems, including optimization of function, evolving strategies and cellular automata. The accent is interaction between GA and parametric modelling using Grasshopper (the plug-in for the Rhino platform) in the field of architecture and urbanism. This approach finds optimal solution, combination of parameters, which complies given conditions controlled by urbanism's requests. In addition, the influences of the GA control parameters on its solving process are studied. This system has been developed and tasted within the Chair for Mathematics, Architectural Geometry and CAAD, at the University of Belgrade, Faculty of Architecture. This study has partly been completed within the following projects, funded by the Ministry of education and Science of Serbia: OI174012 and III47014

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