

MetaDeeP'15 Chairs' Welcome

It is our great pleasure to welcome you to the *2015 Workshop on Metaheuristic Design Patterns – MetaDeeP '15*. This year's workshop follows in the footsteps of the highly successful 2014 workshop on metaheuristic design patterns and continues to provide a forum for researchers and practitioners to present and discuss emerging design patterns in metaheuristics.

The widespread adoption of software 'Design Patterns' heralded a revolution in the software industry, offering catalogues of software designs that cut across lower-level concerns such as choice of programming languages or implementation platform etc. Such software design patterns describe a problem which occurs over and over again in an environment, and then describe the core of the solution abstraction in such a way as to enable the application of the solution many times over without using it the same way twice. In a similar manner, we seek to identify "cross-cutting abstractions" within metaheuristic theory and practice and afford new and unifying perspectives on a field that has become dominated by metaphor and is in danger of increasing fragmentation.

One of the goals of the workshop is to attempt consensus on what the metaheuristics community might usefully obtain from a patterns-based approach. To that end, the range of presentations is intentionally diverse and includes:

- Metaheuristic applications of pre-existing design frameworks (e.g., Blackboard);
- Patterns for the application of surrogate fitness measures;
- Patterns for hybrid metaheuristics (e.g., Two-B or Not Two-B);
- Interactive metaheuristic design patterns (e.g., Preference).

Building on the successful previous MetaDeeP workshop, longer-term motivations continue to be two-fold:

- *Educational*: in adopting a pattern-based perspective, we're seeking to decompose good research practice by cutting 'horizontally' across frameworks and methodologies, looking to abstract out aspects that have yet to be folded back into the mainstream. This can be seen as serving an educational purpose: "how best to convey the practicalities of metaheuristic engineering to the uninitiated?"
- *Facilitating automation*: the "Problem Statement" aspect of the design pattern format essentially gives heuristic preconditions for the application of a pattern. Since this is an essential part of the automated design of metaheuristics, what we'd really like is to convey this heuristic information declaratively (i.e., so that even a computer can understand it). The ultimate goal is to use this information to help reformulate metaheuristic design as a problem of (potentially dynamic) software component assembly.

Above all, we envisage this initiative as primarily bottom-up, driven by the ideas and needs of the community rather than by any arbitrary assumptions. After paper presentations, a panel-led workshop discussion will follow to provide a platform for the full range of opinions of those present, and also to reflect on the extent and state of the emerging landscape of metaheuristic design patterns.

Thanks are due to all who submitted papers. We hope that you will not only find this workshop interesting and thought-provoking but also that it will provide a valuable opportunity to share ideas with other researchers and practitioners interested in "metaheuristics in the large" – and so help shape the future of this exciting initiative.



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Krzysztof Krawiec (Poznan University of Technology, Poland)
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