Proceedings
Workshop on
Generic Programming
(WGP2000)

July 6, 2000
Ponte de Lima, Portugal
Johan Jeuring (editor)
Workshop on Generic Programming — Preface

This report contains the papers selected for presentation at the 2nd Workshop on Generic Programming (WGP2000), which was held on July 6, 2000 in Ponte de Lima, Portugal.

Generic programming is about making programs more adaptable by making them more general. Generic programs often embody non-traditional kinds of polymorphism; ordinary programs are obtained from them by suitably instantiating their parameters. In contrast with normal programs, the parameters of a generic program are often quite rich in structure. For example they may be other programs, types or type constructors, kinds, or even programming paradigms.

There are several different interpretations of the term ‘generic programming’, and what was called generic programming ten years ago, might be standard programming practice now. The papers presented at WGP2000 are mainly about the Bird-Meertens style of generic programming. The theory of datatypes developed in the groups around Bird and Meertens has led to generic (or polytypic) programs, theory about generic programs, and generic programming language extensions. Generic programming is also studied in the context of the C++ Standard Template Library and Adaptive Object-Oriented Programming, amongst others, but we received few submissions from these fields.

The programme committee received 11 submissions, from which 7 were selected for presentation at the workshop. An invited lecture was presented by Richard Bird. The proceedings of the workshop can also be found on the web:


This workshop followed on the 5th Mathematics of Program Construction conference, MPC2000, held July 3-5, 2000 in Ponte de Lima.

WGP2000 is the second workshop on generic programming; the first workshop on generic programming was held on Marstrand, Sweden, in 1998. The proceedings of the first workshop on generic programming can be found on the web:

http://wswmp01.win.tue.nl:1234/WGPProceedings/index.html

Acknowledgements
I would like to express my gratitude to the members of the programme committee for their care in reviewing and selecting from the submitted papers. I am also grateful to the members of the organisation committee.

June 2000
Johan Jeuring

Programme Committee

Patrik Jansson Chalmers, Sweden
Ralf Hinze Bonn, Germany
Graham Hutton Nottingham, Great Britain
Johan Jeuring Utrecht, The Netherlands; chair
Colin Runciman York, Great Britain
Fritz Ruehr Willamette, USA
Tim Sheard OGI, USA
Doaitse Swierstra Utrecht, The Netherlands
**Organisation Committee**

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.R. Henriques</td>
<td>Braga, Portugal</td>
</tr>
<tr>
<td>L.S. Barbosa</td>
<td>Braga, Portugal</td>
</tr>
<tr>
<td>J.B. Barros</td>
<td>Braga, Portugal</td>
</tr>
</tbody>
</table>
Table of Contents

Efficient Generalized Folds ......................................................... 1
   Ralf Hinze
Memo functions, polytypically! ....................................................... 17
   Ralf Hinze
A framework for polytypic programming on terms, with an application to rewriting ...... 33
   Patrik Jansson and Johan Jeuring
Dealing with Large Bananas .......................................................... 46
   Ralf Lämmel, Joost Visser, and Jan Kort
Towards merging recursion and comonads .......................................... 50
   Alberto Pardo
Coding Recursion a la Mendler ...................................................... 69
   Tarmo Uustalu and Varmo Vene
Language Independent Traversals for Program Transformation ................. 86
   Eelco Visser