Dear participants,

Our idea of proposing a workshop to OOPSLA on reflective programming came from a simple observation: a large number of designers and programmers are interested in this type of programming style for different aims and in various application fields. Considering only C++ and Java, although it might appear restrictive to some of you, was done on purpose: these languages are widely used in the industry and many reflective versions are available today. Your expertise both in the design of reflective languages and in the development of systems and applications using their interesting features led us to take stock of the situation. What do users really need? What features do today’s languages provide? What’s missing?

Clearly, we have been pleased by the number of contributions received... and also a bit surprised! Due to the small number of slots available in a single day, less papers than submitted have been accepted for presentation. In order to give a chance to more people to speak and meet the others, we have selected to have both long and short presentations. It was not so easy.... we hope we have made to right choice!

Finally, we would like to thank very much: OOPSLA for making this event possible; Jim Haungs the workshop general chair for his help; and the Center for Computational Physics of the University of Tsukuba who provided us with the support for the realization of the workshop proceedings.

We now anticipate lively discussions... please enjoy!

Best regards

Jean-Charles Fabre
LAAS-CNRS, Toulouse, France

Shigeru Chiba
University of Tsukuba, Japan
SESSION 1 8:30-9:20  Reflection in Java (1)
Session chair: Shigeru Chiba, Univ. of Tsukuba, Japan

8:30-8:50  Michael Golm, University of Erlangen-Nurnberg, Germany
"MetaXa and the Future of Reflection"  ...1

8:50-9:10  Zhixue Wu, Apm Ltd., Cambridge, UK
"Reflective Java and A Reflective Component-Based Transaction Architecture"  ...6

9:10-9:20  Discussion

SESSION 2 9:20-10:10  Reflection in Java (2)
Session chair: Michael Golm, Univ. of Erlangen, Germany

9:20-9:40  Ian Welch, Robert Stroud, University of Newcastle upon Tyne, UK
"Dalang - A Reflective Java Extension"  ...11

9:40-10:00  Satoshi Matsuoka, Hirotaka Ogawa, Tokyo Institute of Technology, Japan
Kouya Shimura, Yasunori Kimura, Fujitsu Labs
Koichito Hotta, Fujitsu Limited
Hiromitsu Takagi, Electrotechnical Laboratory, Japan
"OpenJIT---A Reflective Java JIT Compiler"  ...16

10:00-10:10  Discussion

Break
SESSION 3 10:30-11:20 Implementation Techniques
Session chair: Cecilia M. F. Rubira, Unicamp, Brazil

10:30-10:50 Yuuya Sugita, Keio University, Japan
  Hidehiko Masuhara, University of Tokyo, Japan
  Ken'ichi Harada, Keio University, Japan
  Akinori Yonezawa, University of Tokyo, Japan
  "On-the-fly Specialization of Reflective Programs Using Dynamic Code Generation Techniques"
  ...21

10:50-11:10 Mathias Braux, Ecole des Mines de Nantes, France
  "Speeding up the Meta-level Processing of Java Through Partial Evaluation"
  ...26

11:10-11:20 Discussion

SESSION 4 11:20-12:10 Reflective Systems and Applications
Session chair: Zhixue Wu, Apm Ltd., Cambridge, UK

11:20-11:40 Daniel Sturman, Guruduth Banavar, Robert E. Strom,
  IBM T.J. Watson Research Center, Hawthorne, NY - USA
  "Reflection in the Gryphon Message Brokering System"
  ...32

11:40-12:00 Pierre-Guillaume Raverdy, Robert Le Van Gong, Rodger Lea,
  SONY Distributed System Lab., San Jose, CA - USA
  "DART: A Reflective Middleware for Adaptive Applications"
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12:00-12:10 Discussion

12:10-13:30 Lunch

SESSION 5 13:30-14:20 Compile-time Reflection and Java
Session chair: Satoshi Matsuoka, Tokyo Institute of Technology, Japan

13:30-13:50 Short presentations

  Arthur Lee, Ho-Yun Shin, Korea University, Seoul, Korea
  "Building a Persistent Object Store using the Java Reflection API"
  ...41

  Laurent Berger, I3S-CNRS, Sophia Antipolis, France
  "Compile Time and Runtime Reflection for Dynamic Evaluation of Messages: Application to Interactions between Remote Objects"
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13:50-14:10 Shigeru Chiba, University of Tsukuba, Japan
  "Javassist --- A Reflection-based Programming Wizard for Java"
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14:10-14:20 Discussion
SESSION 6  14:20-15:10  Reflective Programming and Applications
Session chair: Daniel Sturman, IBM Watson, USA

14:20-14:40  Short presentations

Michiaki Tatsubori, Shigeru Chiba, University of Tsukuba, Japan
"Programming Support of Design Patterns with Compile-time Reflection" ...56

Marc-Olivier Killijian, Jean-Charles Fabre, Juan-Carlos Ruiz-Garcia, LAAS-CNRS, Toulouse, France
Shigeru Chiba, University of Tsukuba, Japan
"Development of a MetaObject Protocol for Fault Tolerance using Compile-Time Reflection" ...61

14:40-15:00 Joel Cavarroc, ESSI, France
Sabine Moisan, INRIA, Sophia Antipolis, France
Jean-Paul Rigault, ESSI, France
"Simplifying an Extensible Class Library Interface with Open C++" ...66

15:00-15:10 Discussion

Break

SESSION 7  15:30-16:20  Fault Tolerance Techniques
Session chair: Jean-Charles Fabre, LAAS-CNRS, France

15:30-15:50  Short presentations

Mangesh Kasbekar, Chandramouli Narayanan, Chita R Das, The Pennsylvania State University, PA - USA.
"Using Reflection for Checkpointing Object Oriented Programs" ...71

Amanda Ciblele A. Rosa, Eliane Martins
University of Campinas (Unicamp), Brazil
"Using a Reflective Architecture to Validate Object-oriented Applications by Fault Injection" ...76

15:50-16:10 Luciane Lament Ferreira, Cecilia M. F. Rubira
University of Campinas (Unicamp), Brazil
"Reflective Design Patterns to Implement Fault Tolerance" ...81

16:10-16:20 Discussion
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Session chair: Arthur Lee, Korea University - Seoul, Korea

16:20-16:30  Short presentation
Alexandre Oliva, Luiz Eduardo Buzato
Universidade Estadual de Campinas, Brazil
"Composition of Meta-Objects in Guaraná"  …86

16:30-16:50  Noriki Amano, Takuo Watanabe
Japan Advanced Institute of Science and Technology, Ishikawa, Japan
"LEAD++: An Object-Oriented Reflective Language for Dynamically
Adaptable Software"  …91

16:50-17:00  Discussion

SESSION 9  17:00-17:30  Global Discussion and Closing Remarks
Session chairs: Shigeru Chiba and Jean-Charles Fabre