PLoP® 2014 Conference Proceedings

21st CONFERENCE ON PATTERN LANGUAGES OF PROGRAMS

September 14–17, 2014, Allerton Park/Monticello, IL, USA

Proceedings

PLoP® 2014 is in cooperation with ACM

Copyright Page

Pattern Languages of Programs (PLoP®) conference is the premier event for pattern authors and enthusiasts to gather, discuss, and learn about patterns and software development. PLoP® conferences are promoted and sponsored by The Hillside Group (www.hillside.net). The Hillside Group, through PLoP® and other activities, promotes the use of patterns and pattern languages to record, analyze, and improve software and its development, and supports any new practices that help achieve these goals.

Contents

Welcome to PLoP 2014

Welcome to Allerton Park in Monticello Illinois (the birthplace of PLoP) and to PLoP 2014, the **21ˢᵗ Conference on Pattern Languages of Programs**, the premier event for pattern authors and enthusiasts to gather, discuss, and learn more about patterns, pattern writing, pattern reviewing, shepherding, software development, and collaboration.

The conference program offers a rich set of activities that promote a friendly and effective environment to share expertise, and to give and get feedback from fellow authors. The pre-conference activities start Sunday (September 14) at the Bootcamp, a day-long session for people new to patterns and/or PLoP, led by Rebecca Wirfs-Brock and Joe Yoder. The main conference starts on Monday morning (September 15).

Writers' Workshops are the primary focus at PLoP, and it will be during these that we discuss and review each others' papers. We have four groups of six papers each, which were selected from an initial set of 35 submissions after a period of shepherding. Papers of the Writing Group will have the opportunity to be revised during PLoP under mentorship of experienced pattern writers.

We will have three keynotes: "Exercises in Programming Style," by Cristina Videira Lopes; "Simplicity—The Road Not Taken" by Dave Thomas; and "Root cause analysis of some faults in Design Patterns," by Ralph Johnson.

There will be four focus groups: "Future Language Workshop for the Pattern Community," by Takashi Iba; "Data-driven Design Pattern Development (3DPD)," by Peter Scupelli; "My object can beat up your object," by Michael John; and "Mining New Patterns by Learning from the Trenches," by Robert Hanmer.

On Tuesday night we will be entertained by Brazilian rhythms and singing.

And we have the Games, a well-established and important activity at PLoP. The games help us relax and break the ice, exercise our body and mind, teach us to collaborate better, and reinforce a community of trust.

After the conference, the authors are strongly encouraged to further revise their papers based on the discussions at the conference. A final version of revised papers will be published by Hillside and hosted in the ACM Digital Library as the PLoP 2014 Proceedings.

We would like to thank all authors, shepherds, reviewers, and Program Committee members for their time and collaboration with PLoP 2014. Thank you!

All of these words just to say that we wish you an amazing and productive time during PLoP!

Richard P. Gabriel and Joe Yoder, PLoP 2014 co-Chairs

PLoP® 2014 Conference Proceedings

Pattern Languages of Programs (PLoP®) conference is the premier event for pattern authors and enthusiasts to gather, discuss, and learn more about patterns and software development.

PLoP 2014 Conference Description

Pattern Languages of Programs (PLoP) conference is a venue for pattern authors to have their pattern languages reviewed by fellow authors. The purpose of PLoP is to promote the development of pattern languages, primarily about aspects of software: design and programming, testing, software architecture, user interface design, domain modeling, education, human relations, and software processes. Patterns and pattern languages for domains outside software are also welcome.

PLoP 2014 was held in Allerton Park, Monticello, Illinois from September 14–17, 2014.

We invited contributions from practitioners and researchers on the following:

- Patterns and pattern languages
- Critiques of patterns and pattern languages
- Research on patterns and pattern languages
- Case studies of the use of patterns and pattern languages

PLoP is different from other conferences. It is run as a "writers' workshop," as described in [Richard Gabriel's book, Writers' Workshops and the Work of Making Things](). Before the conference, authors work with a *shepherd* who helps them improve their paper to prepare it for PLoP. After shepherding, the program committee reviews the papers for final acceptance. The writers' workshops provide more feedback, and authors revise their papers again after PLoP. The papers here are these final, revised versions, not the ones reviewed at PLoP.

PLoP 2014 Writers' Workshops

Writers' workshops help the pattern community to improve their patterns and pattern languages. These workshops are the primary focus at PLoP, and in them we discuss accepted papers. Below is the list of papers that were workshopped at PLoP 2014 and included in these proceedings.

1. Narrow Road to the Deep North, led by Richard P. Gabriel

"The Nature of Pattern Illustrating: The Theory and The Process of Pattern Illustrating" by Kaori Harasawa, Natsumi Miyazaki, Rika Sakuraba, Takashi Iba

"Pattern Language for good old future from Japanese culture" by Megumi Kadotani, Shunichi Ishibashi, Kyungmin Lim, Aya Matsumoto, Takashi Iba

"Change Making Pattern Workbook: A Workbook Approach to Pattern Applications" by Sumire Nakamura, Eri Shimomukai, Taichi Isaku, Takashi Iba

2. Pattern Language & Mining, led by Lise Hvatum & Bob Hanmer

"A Pattern Language for Open Academic Society with Non-professional Users" by Koichiro Eto, Tom Hope, Hideaki Takeda

"Learning Patterns for Self-Directed Learning with Notebooks" by Yuji Harashima, Tetsuro Kubota, Tasuku Matsumura, Kazuo Tsukahara, Takashi Iba

"Patterns of Public Policy and Administration: Identifying Interfaces and Relationships" by Paul Chalekian

"Requirements Elicitation using BPM" by Lise Hvatum

"Analyzing Software Patterns Network obtained from Portland Pattern Repository" by Hironori Washizaki, Suthinan Thanintranon, Masashi Kadoya, Yoshiaki Fukazawa, Takeshi Kawamura, Joseph W. Yoder

"Mining New Patterns by Learning from the Trenches" by Robert S. Hanmer, Mehdi Mirakhorli

3. Testing & Development, led by Rebecca Wirfs-Brock & Joseph Yoder

"QA to AQ Part Two: Shifting from Quality Assurance to Agile Quality - "Measuring and Monitoring Quality" by Joseph Yoder and Rebecca Wirfs-Brock

"Patterns for Preparing for a Test Driven Development Session" by Eduardo Guerra, Maurício Finavaro Aniche, Marco Aurélio Gerosa, Joseph Yoder

"Patterns for Testing Distributed Systems Interaction" by Eduardo Guerra, Paulo Bittencourt Moura, Felipe Meneses Besson, Ayla Rebouças, Fabio Kon

"Pattern Enabled Development" by Marvin Toll, William R. Minto

"Business Object State Transition Controller" by Russ Rubis, Ionut Cardei

4. Security, led by Ralph Johnson

"Extensions to Pattern Formats for Cyber Physical Systems" by Antonio Maña, Ernesto Damiani, Sigrid Gürgens, George Spanoudakis

"The Secure Domain Name System pattern" by Eduardo B. Fernandez, Michael Van Hilst

"Cipher Suite Rollback Attack: A Misuse Pattern for TLS Server Authentication Handshake Protocol" by Ali Alkazimi, Eduardo B. Fernandez

"Engineering Secure and Private Systems Using COSSPs" by Antonio Maña, Jose Fran. Ruiz, Marcos Arjona

"Patterns for Fault Tolerant Cloud Software" by Robert Hanmer

"Pattern for fine-grain access-controlled business objects" by Russ Rubis, Dr. Ionut Cardei

* * *

The following papers were workshopped at PLoP but are not included in the proceedings:

"From Environmental Structure to Service Systems Thinking: Wholeness with Centers Described with a Generative Pattern Language" by David Ing

"Feeling of Life' System with a Pattern Language" by Takashi Iba, Norihiko Kimura, Shingo Sakai

"A Journey on the Way to Pattern Writing: Designing the Pattern Writing Sheet" by Takashi Iba

"Improving Code Quality on Automated Tests of Web Applications: A Set of Patterns" by Maurício Aniche, Eduardo Guerra, Marco Aurélio Gerosa

Committees

The PLoP Conference would not be a success without the volunteer help of the shepherds and program committee members. The shepherds devote hours of their time to helping authors improve their papers before the conference. The program committee members help organize the conference, handle requests, and communicate with attendees.

We would like to thank all those who helped make PLoP 2014 a complete success!

Conference Organization Committees

Conference Chair	Richard P. Gabriel (IBM Research, USA)
	Joseph Yoder (The Refactory Inc., USA)
BootCamp	Rebecca Wirfs-Brock (Wirfs-Brock Associates, USA)
	Joseph Yoder (The Refactory Inc., USA)
Publicity	Daniel Cukier (Playax Brazil)
Director of Local Operations	Joseph Yoder (The Refactory Inc., USA)
Registrations	Jason Frye (Web Content Writer, USA)
Submission System	Michael Weiss (Carleton University, CA)
Web Design	Jason Frye (Web Content Writer, USA)

Shepherds

Antonio Maña	Eduardo Guerra	Y C Cheng
Ernst Oberortner	Peter Sommerlad	Michael Weiss
Christian Kohls	Ernst Oberortner	Eduardo Fernandez
Jenny Quillien	Jason Yip	Jose Francisco Ruiz
Juan Reza	Michael Mehaffy	Bob Hanmer
Lise Hvatum	David West	Ademar Aguiar
Joseph Yoder	Christian Köppe	Ralph Johnson
Hans Wegener	Paul Chalekian	

Program Committee

Daniel Cukier (Playax, Brazil)

Takashi Iba (Keio University, Japan)

Filipe Figueiredo Correia (University of Porto / ParadigmaXis, Portugal)

Jenny Quillien (New Mexico Highlands University, USA, personal website)

Alfredo Goldman (University of São Paulo, Brazil)

Michael Mehaffy (Structura Naturalis Inc., University of Oregon, Sustasis Foundation, USA)

Lise Hvatum (Schlumberger, USA)

Christian Köppe (HAN University of Applied Sciences, Arnhem, the Netherlands)

TV Prabhakar (India)

Rosana Teresinha Vaccare Braga (ICMC, University of São Paulo, Brazil)

Eduardo Guerra (National Institute of Space Research -
    INPE, São José dos Campos, SP, Brazil)

Jason Yip (Spotify, USA)

Joseph Yoder (The Refactory Inc., USA)

Mihaela Cardei (Florida Atlantic University, USA)

Yasunobu Kawaguchi (Agilergo Consulting, Japan)

Isaura Nathaly Bonilla Villarreal (Florida Atlantic University, USA)