PLoP 17

PLoP® 2017 Conference Proceedings
24rd CONFERENCE ON PATTERN LANGUAGES OF PROGRAMS

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Proceedings

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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.

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Welcome to PLoP 2017

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

This year, PLoP was held in Vancouver, Canada, which is the first time the main PLoP conference was located outside of the USA. , There are other xPLoP conferences such as AsianPLoP EuroPLoP, SugarloafPLoP, and VikingPLoP which are held in the other continents. The conference is not traditional—the main event is a set of Writers' Workshops where pattern papers are reviewed by fellow authors, led by expert workshop leaders. All the participants had lots of opportunities to learn about patterns, pattern languages, pattern writing, and the quest for human-centered software creation in the panoply of PLoP activities: Writers' Workshops, Focus Groups, BoF sessions, BootCamp, Games, shared meals and chit-chat.

The Writers' Workshops are the primary focus of our time at PLoP and they allow authors to discuss and review each other's papers in a very fruitful way. We had five groups of five to six papers each, which were selected from an initial set of submissions after a considerable period of shepherding. Four of these papers were selected for a writing group and had the opportunity of being evolved during PLoP with the mentoring of an experienced pattern writer.

This year also had the following invited talks: Chris Richardson showed "A Pattern Language for Microservices", and Michael Mehaffy gave his talk " "Horizons of Pattern Languages: Software, Cities, Planet". There were also six focus groups / workshops where participants actively explored ideas, learning from peer discussions and activities. The focus group / workshops at PLoP 2017 were: "Negotiating Order with Generative Pattern Language" by David Ing, "Microservices Pattern Mining" by Chris Richardson, Richard Gabriel, Takashi Iba, Joseph Yoder, "Co-exploring tools and methods for pattern literacy" by Helene Finidori, Peter Tuddenham, "Writers' Workshop on Microservices Patterns Book" by Chris Richardson, Richard Gabriel, "Be it for cows or code: a pattern language for the commons" by Jenny Quillien, Richard Gabriel, Rebecca Wirfs-Brock, and "Patterns for Big Data Processing Systems" by Sumit Kalra, Prabhakar TV, Aditya Nigam.

And last but not least, we have the Games, a well-established and very important activity at PLoP. Guided by Christian Kohls. The games help us to break the ice, exercise our bodies and minds, collaborate better, and reinforce our community of trust.

After the conference, the authors were strongly encouraged to further evolve their papers in order to accommodate suggestions for improvement gathered during the discussions at the conference. A final version of these evolved papers are published in the ACM Digital Library as PLoP 2017 Proceedings.

We would like to thank all authors, shepherds, reviewers, and members of the Program Committee for their time and collaboration. Thank you all for making PLoP 2017 possible!

Takashi Iba, PLoP 2017 Chair

PLoP® 2017 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 2017 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 2017 was held in Vancouver, Canada from October 23 - 25, 2017.

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 interact 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 2017 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 2016 and included in these proceedings.

Roughness Group
led by Richard Gabriel

"Towards an Educational Design Pattern Language for Massive Open Online Courses (MOOCs)" by Aracele Fassbinder, Ellen Francine Barbosa, George D. Magoulas

"A Pedagogical Pattern Language for Mobile Learning Applications"
by Maria Lydia Fioravanti, Ellen Francine Barbosa

"Are Software Patterns Simply a Handy Way to Package Design Heuristics?"
by Rebecca Wirfs-Brock

"Patterns as Structure, Process and Community" by MaryLynn Manns, Joe Yoder

"Pattern Literacy in Support of Systems Literacy - An approach from a Pattern Language perspective" by Helene Finidori, Peter Tuddenham

Simplicity and Inner Calm Group
led by Jenny Quillien

"The design of fitness apps" by Meryem Dural, Christian Kohls

"Patterns for Things that Fail" by António Ramadas, Gil Domingues, Joao Dias, Ademar Aguiar, Hugo Ferreira

"Motivating Self-Improvement: Methods to Stay Motivated" by Aimi Burgoyne, Takashi Iba

"Fun Language: Sharing the "Fun" to Invite People to Do Daily Activities"
by Takashi Iba, Ayaka Yoshikawa, Hitomi Shimizu

"Effectiveness of Learning 8 Languages Using Patterns" by Mary Tedeschi

"Lesson Design Patterns: How to Make Learning an Interesting One"
by Tatsuaki Kanai, Hiromitsu Fujiwara, Miho Tsutsui

Local Symmetries Group
led by Michael Weiss and Christian Kohls

"Philosophy and Methodology of Clustering in Pattern Mining: Japanese Anthropologist Jiro Kawakita's KJ Method" by Takashi Iba, Ayaka Yoshikawa, Konomi Munakata

"Blended Interaction in innovation spaces" by Guido Münster, Christian Kohls

"Onwards to Innovation- Patterns for Understanding Innovation Opportunities" by Christian Kohls

"Patterns for Regulating Behavior in Innovation Communities" by Michael Weiss

Strong Centers Group
led by Eduardo Guerra, Paulina Silva

"The Secure Software Container Pattern" by Madiha H. Syed, Eduardo B. Fernandez, Paulina Silva

"Implementation Patterns for Multi-Tenancy" by Sumit Kalra, Prabhakar TV

"Patterns to automate tests for non-deterministic algorithms" by Andre S. Ivo, Eduardo M. Guerra

"Design of Blockchain-Based Apps Using Familiar Software Patterns with a Healthcare Focus" by Peng Zhang, Jules White, Douglas C. Schmidt, Gunther Lenz

"Internet of Things Security Patterns" by Lukas Reinfurt, Uwe Breitenbücher, Michael Falkenthal, Paul Fremantle, Frank Leymann

"A Reference Architecture for Web Browsers: Part III, A pattern for a Web Browser Kernel" by Paulina Silva, Raúl Monge, Eduardo B. Fernández

Not Separateness Group
led by Lise Hvatum and Rebecca Wirfs-Brock

"Patterns for Implementing Software Analytics in Development Teams" by Joelma Choma, Eduardo Martins Guerra, Tiago Silva da Silva

"Vulnerability Anti-Patterns: A Timeless Way to Capture Poor Software Practices (Vulnerabilities)" by Tayyaba Nafees, Natalie Coull, Ian Ferguson, Adam Sampson

"InnerSource Patterns for Collaboration" by Erin Bank, Georg Grutter, Robert Hanmer, Klaas-Jan Stol, Padma Sudarsan, Cedric Williams, Tim Yao, Nick Yeates

"Patterns for Usage Centred Design" by Robert Biddle, James Noble, Ewan Tempero

"Pattern Stories and Sequences for the Backlog: Applying the Magic Backlog Patterns" by Lise Hvatum, Rebecca Wirfs-Brock

"MetaAutomation: A Pattern Language to Apply Automation to Software Quality" by Matt Griscom

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 2017 a complete success!

Conference Organization Committees

Conference Chair	Takashi Iba (Keio University, Japan)
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BootCamp	Rebecca Wirfs-Brock & Joseph Yoder
Games	Christian Kohls (TH Köln, Germany)
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