

Evaluation and Usability of Programming Languages and Tools (PLATEAU)

Shane Markstrum

Google
smarkstr@google.com

Emerson Murphy-Hill

North Carolina State University
emerson@csc.ncsu.edu

Caitlin Sadowski

University of California, Santa Cruz
supertri@cs.ucsc.edu

Abstract

Programming languages exist to enable programmers to develop software effectively. But how *efficiently* programmers can write software depends on the usability of the languages and tools that they develop with. The aim of this workshop is to discuss methods, metrics and techniques for evaluating the usability of languages and language tools. The supposed benefits of such languages and tools cover a large space, including making programs easier to read, write, and maintain; allowing programmers to write more flexible and powerful programs; and restricting programs to make them more safe and secure. We plan to gather the intersection of researchers in the programming language, programming tool, and human-computer interaction communities to share their research and discuss the future of evaluation and usability of programming languages and tools. We are also interested in the input of other members of the programming research community working on related areas, such as refactoring, design patterns, program analysis, program comprehension, software visualization, end-user programming, and other programming language paradigms.

Categories and Subject Descriptors D.3.0 [Programming Languages]: Standards; H.1.2 [User/Machine Systems]: Human Factors

General Terms Human Factors, Languages

Keywords Evaluation, Programming Languages, Tools, Usability

1. Main Themes and Goals

Following on from the three previous iterations of the PLATEAU workshop at OOPSLA/Onward! and SPLASH, this workshop aims to bring together practitioners and researchers interested discussing usability and evaluation of programming languages and tools with respect to language design and related areas. We will consider: empirical studies of programming languages; methodologies and philosophies behind language and tool evaluation; software design metrics and their relations to the underlying language; user studies of language features and software engineering tools; visual techniques for understanding programming languages; critical comparisons of programming paradigms, such as object-oriented vs. func-

tional; and tools to support evaluating programming languages. We have two goals:

1. Develop and sustain a research community that shares ideas and collaborates on research related to the evaluation and usability of languages and tools.
2. Encourage the languages and tools communities to think more critically about how usability affects the design and adoption of languages and tools.

2. Organizers

- **Shane Markstrum** is currently a Software Engineer at Google in New York, USA. Prior to joining Google he was an Assistant Professor in the Computer Science department at Bucknell University and a Visiting Scholar at Victoria University of Wellington, New Zealand. He received his Ph.D. from the University of California, Los Angeles in 2009. His research interests include domain-specific languages and tools for extensible type systems; and building tool support for non-traditional language constructs.
- **Emerson Murphy-Hill** is currently an Assistant Professor at North Carolina State University, USA. Prior to joining the NCSU faculty he was a postdoctoral researcher at the University of British Columbia in the Software Practices Lab with Gail Murphy. He received his Ph.D. from Portland State University in 2009. His research interests include human-computer interaction and software tools.
- **Caitlin Sadowski** is currently a Software Engineer at Google in Mountain View, USA. She received her Ph.D., focused on dynamic analyses for detecting concurrency errors, from the Computer Science Department of UC Santa Cruz where she was advised by Jim Whitehead and Cormac Flanagan. Her research interests include the evaluation and usability of programming languages and software, parallelism and concurrency, and computer science education. She was a recipient of a distinguished paper award at OOPSLA 2011 for her paper “Two for the Price of One: A Model for Parallel and Incremental Computation.” She was also a Co-Chair for the SPLASH/OOPSLA Transitioning to Multicore (TMC) workshop in 2011 and the ICSE User evaluation for Software Engineering Researchers (USER) workshop in 2012.

3. Program Committee

The following people form the Program Committee (PC) for the workshop and will help promote the workshop in the programming languages and human-computer interaction communities.

- Yvonne Coady - University of Victoria, Canada

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

Copyright © ACM [to be supplied]...\$10.00

- Jonathan Edwards - MIT, USA
- Thomas Fritz - University of Zurich, Switzerland
- Philip Guo - Google, USA
- Stefan Hanenberg, University of Duisburg-Essen, Germany
- Ciera Jaspan, Cal Poly Pomona, USA
- Thomas LaToza - UC Irvine, USA
- Portia O’Callaghan - MathWorks, USA
- Chris Parnin, Georgia Institute of Technology, USA
- Philip Wadler, University of Edinburgh, UK

4. Anticipated Attendance

We anticipate the following number of attendees:

- Minimum: 20
- Ideal: 35
- Maximum: 60

5. Advertisement

We will advertise this workshop by inviting participants of workshops in the areas of language design, tools, and general usability directly; as well as by emailing related mailing lists, posting on blogs contacting specific people known to be working in this area directly, and through our group mailing list. In addition we will maintain a website¹ for presenting organizational information.

6. Participant Preparation

Workshop participants should submit a paper prior to one month before the workshop. Papers will be made available through the workshop website and participants are encouraged to have read the papers before attending the workshop. Participants are also asked to prepare a short presentation to support their paper. We will accept papers up to 10 pages in length. To help improve the quality of submissions, we will provide attendees with exemplary papers and presentations from previous conferences.

¹ <https://sites.google.com/site/workshopplateau/>

We will look for papers that describe work-in-progress or recently completed work based on the themes and goals of the workshop or related topics, report on experiences gained, question accepted wisdom, raise challenging open problems, or propose speculative new approaches. We plan to have the workshop proceedings published in the ACM Digital Library.

7. Activities and Format

This workshop will be run as a full-day workshop at SPLASH and Onward! 2012. We will have an introduction and keynote session in the morning followed by the presentation of workshop papers in three separate sessions followed by a breakout session at the end. We will prepare a poster for the SPLASH/Onward! Welcome Reception representing the presentations of the papers. Table 1 outlines the schedule of the format of the workshop.

Time	Activity
0830–0900	Introductions
0900–1000	Key Note Presentation
1000–1030	Morning Break
1030–1200	Presentation of workshop papers
1200–1330	Lunch Break
1330–1445	Presentation of workshop papers
1445–1515	Afternoon Break
1515–1715	Breakout session
1715–1730	Participant Feedback and Organizers Report

Table 1. Workshop Schedule

8. Post-workshop Activities

We will publish our participant’s papers in the ACM Digital Library, as outlined earlier (§6). We aim to continue hosting this workshop in future years.

9. Special Requirements

We require the room to have easels, pens, and paper for our breakout sessions; Internet access; power strips for attendees to plug their laptops into; and a computer projector and screen for attendees to show the presentations of their position papers.