SOFTWARE ENGINEERING notes

TABLE OF CONTENTS

LETTERS

- 1 From the Chair: God Put A Smile On Your Face Will Tracz
- **2** From the Editor Michael Wing
- 3 Top 10 Downloaded Articles
- 3 Top 10 Most Cited Articles

COLUMNS

- 5 Pathologies of Compliance: Industrial Disease Robert Schaefer
- 7 Learning and Celebration of Software Engineering History and Impact Tao Xie
- 8 Passages Alex Groce
- Surfing the Net for Software Engineering Notes Mark Doernhoefer
- **19** Risks to the Public Peter G. Neumann and contributors

REPORTS & PAPERS

- The list of Reports is found on page 2
- The list of Software Mining Workshop Papers is found on page 2
- The list of JPF Workshop Papers is found on page 3
- The list of Regular SEN Papers is found on page 3

WORKSHOP & CONFERENCES

- **52** Calendar of Events Daniela Castelluccia
- 53 FCRC 2015
- **54** ICSE 2015
- 55 ESEC/FSE 2015





VOLUME 40 ■ NUMBER 1 ■ January 2015

SOFTWARE ENGINEERING NOTES

www.sigsoft.org/SEN/ SIGSOFT EXECUTIVE COMMITTEE

CHAIR:

Will Tracz, Owego, NY 13827, <will.tracz@acm.org>

VICE CHAIR:

Laura K. Dillon, Dept. of CS&E, Michigan State University, 3115 Engineering Building, East Lansing, MI 48824, +1-517-353-4387 (work), <ld>ldillon@msu.edu>

SECRETARY/TREASURER:

Gail C. Murphy, Department of Computer Science, University of British Columbia, 2366 Main Mall, Vancouver BC Canada V6T 1Z4, +1-604-822-5169, <murphy@cs.ubc.ca>

AT-LARGE MEMBERS:

Frances Paulisch, Siemens AG, Corporate Technology, Otto-Hahn-Ring 6, D-80200 Munich, Germany, <frances.paulisch@siemens.com>

Frank Tip, Samsung Research America 1732 N. First Street, 6th Fl., San Jose, CA 95112 <ftip@samsung.com>

Willem Visser, Stellenbosch University, South Africa, http://www.cs.sun.ac.za/~wvisser/

MOST RECENT PAST CHAIR:

David S. Rosenblum, School of Computing, National University of Singapore, Computing 1, 13 Computing Drive, Singapore 117417, Republic of Singapore, +65 6516 6230 (work), <david@comp.us.edu.sg>

NEWSLETTER EDITOR:

Michael Wing, <wingacm@swcp.com>

ASSOCIATE EDITORS:

Peter Harris, Independent Software Architect, Faster. Cheaper. More in Control., <ph@peteroharris.com>

Sujoy Gupta, AppDirect Inc., <sujoy.gupta@appdirect.com>

SEN PRODUCTION EDITOR:

Ajay Jain, Adobe Systems, <ajjain@adobe.com>

INTERNATIONAL LIAISON:

Shing-Chi Cheung, Dept. of Computer Science and Engineering, The Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong, +852 2358 7016, <scc@cs.ust.hk>

HISTORY LIAISON:

Tao Xie, Department of Computer Science, University of Illinois at Urbana-Champaign, 4237 Siebel Ctr., 201 N. Goodwin Ave., Urbana, IL 61801, +1 217.244.5931 taoxie@illinois.edu>

PRACTITIONER LIAISON:

Mark Grechanik, Computer Science Department, University of Illinois at Chicago, <DRMark@uci.edu>

CAP COORDINATOR:

Wei Le, Iowa State University, <weile@iastate.edu>

INFORMATION DIRECTOR:

Greg Cooper, <GC1@acm.org>

Software Engineering Notes is an informal publication of the ACM Special Interest Group on Software Engineering (SIGSOFT) concerned with the cost-effective, timely development and maintenance of high-quality software. Relevant topics include requirements, specification, design and implementation methods, software maintenance, reuse, and re-engineering, quality assurance, measurement and evaluation, software processes, automated tools, and practical experience, etc. SIGSOFT seeks to address research and development issues in these areas and to provide a common ground for both, through sponsorship of conferences, symposia and workshops, the publication of SEN, and the dissemination of information via the SIGSOFT member email distribution list.

SIGSOFT sponsors an annual conference, Foundations of Software Engineering (FSE), in the Fall and co-sponsors the International Conference of Software Engineering (ICSE) in the Spring, in addition to sponsoring several workshops and symposia each year on specialized and timely topics.

Material for publication in SEN should be submitted to the editor electronically as a .txt, .doc, or .tex file. Paper and reports should use the LaTeX or Word format available at http://www.acm.org/sigsoft/SEN/subpub.html. CFPs and Advance Programs for SIGSOFT sponsored or in cooperation events may be submitted as .pdf files with all fonts embedded. Because only the abstracts of papers and reports will appear in the print issue of SEN, authors should review their abstract to make sure it reflects the key points addressed in the document, which will appear in full in the ACM Digital Library.

Submissions in the form of letters, abstracts, book reviews, specialized bibliographies, notices, news reports, etc. are all welcome. All contributions are considered personal rather than organizational; **technical contributions are considered as unrefereed working papers.** Authors should note that by submitting an article for distribution in SEN they grant to ACM the following non-exclusive, perpetual, worldwide rights:

- to publish in print on condition of acceptance by the editor
- to digitize and post your article in the electronic version of this publication
- to include the article in the ACM Digital Library and in any Digital Library related services
- to allow users to make a personal copy of the article for non-commercial, educational or research purposes

However, as a contributing author, you retain copyright to your article and ACM will make every effort to refer requests for commercial use directly to you.

Additional copies of SEN will be provided to authors only if requests are received before the issue is published.

Notice to Past Authors of ACM-Published Articles: ACM intends to create a complete electronic archive of all articles and/or other material previously published by ACM. If you have written a work that has been previously published by ACM in any journal or conference proceedings prior to 1978, or any SIG Newsletter at any time, and you do NOT want this work to appear in the ACM Digital Library, please inform permissions@acm.org, stating the title of the work, the author(s), and where and when published.

Members wishing to participate in SIGSOFT activities may contact the Chair or Vice Chair. To join SIGSOFT, contact ACM, 2 Penn Plaza, Suite 701, New York, NY 10121-0701, 1-212-869-7440. Annual dues are \$25 for ACM members and associates and \$12 for student members. Institutional or library subscriptions to SEN are \$35 per year. Back issues are available from ACM Order Dept., P.O. Box 12114, Church Street Station, New York, NY 10257. For other SIGSOFT related business, contact Fran Spinola, SIG Services, ACM, 2 Penn Plaza, Suite 701, New York, NY 10121-0701 (1-212-626-0603, <spinola@hq.acm.org>).

Software Engineering Notes (ISSN 0163-5948) is published six times a year in January, March, May, July, September, and November by ACM, 2 Penn Plaza, Suite 701, New York, NY 10121-0701. Periodical postage paid at New York, NY 10121-0701 and additional mailing offices. POSTMASTER: Send address changes to Software Engineering Notes, ACM, 2 Penn Plaza, Suite 701, New York, NY 10121-0701.

Letter from the Chair God Put A Smile Upon Your Face

Will Tracz will@tracz.org

Where do we go nobody knows?

Where do you want to go this year? Where did 2014 go? There were two great conferences that I was fortunate to attend: ICSE in Hyderabad and FSE in Hong Kong! Many thanks to Shing-Chi Cheung, Alex Orso, Peggy Storey and the entire FSE organizing and program committees for achieving a technically rewarding and fun conference that set new attendance and submission records (as well as having the lowest registration cost).

I've gotta say I'm on my way down

As I look back, I can't help but look forward, maybe I should say I am looking forward to the end of my tenure as I wind down my time as SIGSOFT chair. I would like to thank David Rosenblum for putting together a terrific slate of candidates for the next set of officers. It will be hard for the membership to decide who to vote for; at least I know it will be hard for me.

God give me style and give me grace God put a smile upon my face

That smile that is on my face is from all the fond memories I have from serving as your chair. I have been blessed with a talented and helpful team of SIGSOFT officers as well as volunteers. In particular I would like to express my sincere gratitude to Mike Wing, the editor of SEN, Ajay Jain, the production editor, and associate editors, Sujoy Gupta and Peter Harris. In addition I would like to acknowledge the hard work of Roshanak Roshandel at Seattle University, our Conference Aid Program for Students (CAPS) Coordinator from 2006-2015. I know the hundreds of SIGSOFT student members who received travel support to SIGSOFT-sponsored conferences during that time also appreciate her efforts. It goes without saying that I am grateful to Wei Le at Iowa State University for volunteering to serve as the new CAPS Coordinator, and for suggestion changes in the application process and infrastructure.

Where do we go to draw the line?

Unfortunately in September we had to draw the line on SEN paper submissions because of three issues: high-volume, low-quality, and rampart plagiarism. At times we were receiving 20+ papers per week (that isn't a typo! 20 per week – not per month – not per issue). It would be one thing if the papers were well-written, but the vast majority were from first time authors who were in dire need of copy editing for readability (and that often times the authors assumed would be provided). Then there were the too often cases of sentences, paragraphs, and even whole papers that were "reused" verbatim (or we could say improperly cited) Needless to say it was time consuming to check for these problems and then to recheck – or ... I think you get the picture. We shut down submissions to properly clear the backlog and, as soon as the new submission site is available, we will be

establishing new submission and review guidelines, as well as looking for reviewers to join the SEN review board as associate editors.

I've gotta say I wasted all your time

I hope not! I know I have been a bit verbose at times, but there has been a lot happening. Speaking of time – one of the new benefits that has been added to SIGSOFT members this year is targeted to those members who have been members for a long time, in particular what ACM call "retired²" SIGSOFT is now offering discounted membership rates (i.e., same as student membership rates) for retired members who have been SIGSOFT members for the last 10 years and at least 60 years old. SIGSOFT sponsored conference will apply this policy to conference registration fees also with opportunities for retired members to mentor / network with students in attendance.

Where do I go to fall from grace? God put a smile upon your face, yeah

What puts a smile on my face is acknowledging the awards SIGSOFT memberships have received. In particular:

- Mary Shaw received the National Medal of Technology and Innovation from President Barack Obama at the White House last November http://www.youtube.com/watch?v=uMC3qefVktc&list=UUYxRIFDqcW M4y7FfpiAN3KQ
- 2014 ACM Distinguished Scientist: Robyn Lutz
- 2014 ACM Distinguished Educator: Jeff Gray and Judith Bishop

Now, when you work it out I'm worse than you

Speaking of work – I found an interesting article in *Computerworld* describing the "10 hottest IT Skills" http://www.computerworld.com/article/2844020/careers/10-hottest-it-skills-for-2015.html. I know IT is not the focus of much Software Engineering research – but I would argue that Software Engineering has a lot to offer to IT. That said, here is the list, with last year's ranking parenthetically shown.

- 1. (1) Programming/application development
- 2. (5) Project management
- 3. (2) Help desk/technical support
- 4. (7) Security/compliance governance
- 5. (not listed last year)Web development
- 6. (6) Database administration
- 7. (8) Business intelligence/analytics
- 8. (4) Mobile applications and device management
- 9. (3) Networking
- 10. (11) Big data

Yeah, when you work it out I wanted to

Did anyone participate in this years "Hour of Code"? I wanted to. According to code.org, over 91.5 million people have "tried and Hour of Code" with over 4,522 million lines of code written by students (as of the beginning of 2015). Somehow I wonder if SIGSOFT could get them to change their slogan: "Every student in every school should have the opportunity to learn computer science." to "Every student in every school should have the opportunity to learn software engineering."? But I am biased:-)

Now, when you work out where to draw the line

¹Music and lyrics by **Coldplay** - Christopher Anthony John Martin, Guy Rupert Berryman, William Champion, Jonathan Mark Buckland.

² Being "retired" myself, I think "tired" is a better term.

Speaking of work, I saw another article in IEEE Spectrum that I remember sadly when SIGPLAN Notices stopped taking papers. cited the top programming languages in December 2014 compared to 2013. I just found it interesting

(http://www.tiobe.com/index.php/content/paperinfo/tpci/index.html)

1	1	C	17.588%	-0.30%
2	2	Java	14.959%	-2.35%
3	3	Objective-C	9.130%	-1.07%
4	4	C++	6.104%	-2.16%
5	5	C#	4.328%	-1.29%
6	6	PHP	2.746%	-2.53%
7	10	JavaScript	2.433%	+0.58%
8	8	Python	2.287%	+0.08%
9	11	Visual Basic .NET	2.235%	+0.55%
10	12	Perl	1.826%	+0.75%

Your guess is as good as mine

What will 2015 bring? Your guess is as good as mine. I am DARPA-funded PLINY³ about the (www.techbriefs.com/tv/PLINY) of "taking all the available code in the world and putting it in a data base." Then using it to "help programmers write new code or fix old code." I guess this is consistent with what Steve Ballmer, the former Microsoft CEI, is saying that machine learning will be the focus of the next era of computer science. Whatever. If you have any new ideas or old ones whose day will come – please fire at...



Michael Wing

editors_sigsoft@acm.org

Welcome to the January 2015 issue of SEN.

This is the biggest issue that I have worked on so far. We have columns from Mark, Bob, Alex, Peter, and Tao. Mark writes about estimating projects in our modern world, where applications are concoctions of many languages. Bob writes about the ironies of complying with rules. Alex links software to James Joyce, Samuel Beckett, and Ezra Pound. (You may have read it to believe). And of course Peter writes about the dangers of software. We also have Tao's new column about the history of SE and we hope it becomes a regular feature.

We also have 13 regular papers, seventeen workshop papers, five workshop reports, two book reviews, Daniela's calendar, and Ahmed's book list.

This issue has been humbling for me, because I am disappointed to say that we have called a moratorium on paper submissions. The set of papers in this issue is the largest collection I have ever accepted in spite of the fact that for months, no authors were given second chances to revise their papers. We simply received too many papers and nobody had enough time to do the work.

I am very sad that this happened to SEN on my watch. When we figure out how to do the work, we will resume taking papers.

But for now, please enjoy the issue. Michael Wing



	Report Title/Author	Pg
1	Devising the Future of the Models@run.time Workshop Sebastian Götz, Nelly Bencomo and Robert France	26
2	Software Architecture Patterns: Reflection and Advances [Summary of the MiniPLoP Writers' Workshop at ECSA'14] Neil B. Harrison, Uwe van Heesch, Stefan Sobernig, Peter Sommerlad, Martin Filipczyk, Alexander Fülleborn, Angelika Musil and Juergen Musil	30
3	ACM History Committee Archiving Workshop Thomas J. Misa	35
4	SEES Summary: Software Engineering Educators Symposium 2014 Chang Xu, Laura Dillon	38
5	A Report on Software Engineering Education Workshop (SEEW) 2014 Co-Located with Asia-Pacific Software Engineering Conference 2014 Ashish Sureka, Y. Raghu Reddy, Masateru Tsunoda	40

Table 1: SEN Volume 40 Number 1 Reports

	Software Mining Workshop Papers Title/Author	Pg
	i	U
1	Improving Software Quality and Productivity Leveraging Mining Techniques [Summary of the Second Workshop on Software Mining, at ASE 2013] Ming Li, Hongyu Zhang, David Lo and Lucia	44
2	Automata-based Pattern Mining from Imperfect Traces Giles Reger, Howard Barringer and David Rydeheard	44
3	Interaction Traces Mining for Efficient System Responses Generation Miao Du, Steve Versteeg, Jean-Guy Schneider, Jun Han, and John Grundy	44
4	Comparing Incremental Latent Semantic Analysis Algorithms for Efficient Retrieval from Software Libraries for Bug Localization Shivani Rao, Henry Medeiros, and Avinash Kak	44
5	Calling Network: A New Method for Modeling Software Runtime Behaviors Yu Qu, Xiaohong Guan, Qinghua Zheng, Ting Liu, Jianliang Zhou and Jian Li	45
6	Towards a Model-based Software Mining Infrastructure Philip Makedonski, Fabian Sudau and Jens Grabowski	45
7	On Incomplete Bug Fixes in Eclipse and Programmers' Intuition on These Sabih Agbaria and Joseph (Yossi) Gil	45
8	Achieving Effective Test Suites for Reactive Systems using Specification Mining and Test Suite Reduction Techniques Prasad Bokil, Padmanabhan Krishnan and R. Venkatesh	45

Table 2: SEN Volume 40 Number 1 Software Mining Workshop **Papers**

³ Part of the DARPA Mining and Understanding Software Enclaves (MUSE) program. BTW, Pliny the Elder is the Roman author who wrote the first encyclopedia – it is also the name of a Double India Pale Ale made by Russian River Brewing Company.

	JPF Workshop Papers Title/Author	Pg
	Concurrent Bounded Model Checking	
1	Quoc-Sang Phan, Pasquale Malacaria and	46
	Corina Pasareanu	
	From Test Purposes to Formal JPF Properties	
2	Simone Hanazumi, Ana C. V. de Melo and	46
	Corina S. P`as`areanu	
	Symbolic Execution for Checking the Accuracy	
3	of Floating-Point Programs	46
3	Jaideep Ramachandran, Corina P'as' areanu and	40
	Thomas Wahl	
	Improving Coverage of Test Cases Generated by	
4	Symbolic PathFinder for Programs with Loops	46
-	Rody Kersten, Suzette Person, Neha Rungta and	40
	Oksana Tkachuk	
	Minimizing the Size of Path Conditions Using Convex	
5	Polyhedra Abstract Domain	47
	Justin Lloyd and Elena Sherman	
	JPF Verification of Habanero Java Programs using	
6	Gradual Type Permission Regions	47
	Peter Anderson, Nick Vrvilo, Eric Mercer and Vivek Sarkar	
	Verification of Architectural Constraints on Sequences	
7	of Method Invocations	47
	Stuart Siroky, Rodion Podorozhny and Guowei Yang	
	Generation of Library Models for Verification of	
8	Android Applications	47
0	Heila van der Merwe, Oksana Tkachuk,	47
	Brink van der Merwe and Willem Visser	
	The Dart, the Psyco, and the Doop	
	Concolic Execution in Java PathFinder and its	
9	Applications	48
	Marko Dimjaševi´c, Dimitra Giannakopoulou, Falk Howar,	
	Malte Isberner, Zvonimir Rakamari´c, Vishwanath Raman	

Table 3: SEN Volume 40 Number 1 JPF Workshop Papers

	SEN Regular Papers Title/Author	Pg
1	A Measures and Metrics Framework for Software Safety P.V. Srinivas Acharyulu and P. Seetharamaiah	48
2	Modern Enterprises in the Bubble: Why Big Data Matters Enrico Giacinto Caldarola, Antonio Picariello and Daniela Castelluccia	48
3	Incorporating Security Features in Service-Oriented Architecture using Security Patterns Ashish Kumar Dwivedi and Santanu Kumar Rath	48
4	Software Architecture Recovery using Genetic Black Hole Algorithm Kawal Jeet and Renu Dhir	49
5	A Proactive Procedure to Mitigate the BYOD Risks on the Security of an Information System Rakesh Kumar and Hardeep Singh	49
6	Programming Languages shouldn't be "too Natural" Dino Mandrioli and Matteo Pradella	49
7	Empirical Study of Agile Software Development Methodologies: A Comparative Analysis Gurpreet Singh Matharu, Anju Mishra, Harmeet Singh and Priyanka Upadhyay	49
8	Development of a Multi-Agent Framework for Software Quality Muhammed Maruf Öztürk, 'Ibrahim C'IL and Ahmet Zengin	50
9	Use of Semi-Formal and Formal Methods in Requirement Engineering of ILMS Souvik Sengupta and Ranjan Dasgupta	50

10	Design of a Component Interface Complexity Measurement Tool for Component-Based Systems Jawwad Wasat Shareef and R. K. Pandey	50
11	A Literature Review of the Reliability of Composite Web Service in Service-Oriented Architecture Neha Singh and Kirti Tyagi	50
12	Modeling of Safety-Critical Systems Using Petri Nets B. Esther Sunanda and P. Seetharamaiah	51
13	Software Development Roles: A Multi-Project Empirical Investigation Murat Yilmaz, Rory V. O'Connor and Paul Clarke	51

Table 4: SEN Volume 40 Number 1 Papers

Top 10 Downloaded Articles

(past 6 weeks)

http://dl.acm.org/sig.cfm?id=SP950

- WikiBrain: Democratizing computation on Wikipedia 2014 Shilad Sen, Toby Jia-Jun Li, WikiBrain Team, Brent Hecht. Downloaded 253 (new) times
- Conflict management 2009, Kresimir Popovic,
 Zeljko Hocenski. Downloaded 207 (new) times
- 3. **Software engineering issues for mobile application development** 2010, Anthony I. Wasserman. Downloaded 205 (new) times
- 4. **Software development lifecycle models** 2010, Nayan B. Ruparelia. Downloaded 200 (127) times
- Case studies for software engineers 2006,
 Dewayne E. Perry, Susan Elliott Sim, Steve Easterbrook.
 Downloaded 162 (new) times
- Install anywhere tutorial and reference guide by Zero G
 Team 2010, Sonal Dekhane. Downloaded 139 (new) times
- Scratchpad memory: design alternative for cache on-chip memory in embedded systems – 2002,
 Rajeshwari Banakar, Stefan Steinke, Bo-Sik Lee,
 M. Balakrishnan, Peter Marwedel. Downloaded 137 (new) times
- 8. Managing the development of large software systems: concepts and techniques 1987, W. W. Royce. Downloaded 132 (new) times
- Exploiting undefined behaviors for efficient symbolic execution – 2014, Asankhaya Sharma. Downloaded 128 (new) times
- 10. **Software, performance, or engineering?** 2002, Daniel A. Menascé. Downloaded 123(new) times

Top 10 Most Cited Articles

- 1. **Foundations for the Study of Software Architecture** 1992, Dewayne E. Perry, Alexander L. Wolf. Cited 490 (489) times.
- 2. Bandera: Extracting Finite-State Models from Java Source Code 2000, James C. Corbett, Matthew B. Dwyer, John Hatcliff, Shawn Laubach, Corina S. Păsăreanu, Robby, and Hongjun Zheng. Cited 394 (393) times.
- 3. N Degrees of Separation: Multi-dimensional Separation of Concerns 1999, Peri Tarr, Harold Ossher, William Harrison, Stanley M. Sutton, Jr. Cited 387 (385) times.

- 4. **CUTE: a Concolic Unit Testing Engine for C** 2005, Koushik Sen, Darko Marinov, and Gul Agha. Cited 378 (359) times.
- 5. **Dynamo: a Transparent Dynamic Optimization System** 2000, Vasanth Bala, Evelyn Duesterwald, Sanjeev Banerjia. Cited 347 (346) times.
- 6. **Interface Automata** 2001, Luca de Alfaro, Thomas A. Henzinger. Cited 347 (345) times.
- 7. Patterns in Property Specifications for Finite-State Verification 1999, Matthew B. Dwyer, George S. Avrunin, James C. Corbett. Cited 308 (302) times
- 8. **Program Slicing** 1981, Mark Weiser. Cited 265 (263) times.
- 9. **Automatically Validating Temporal Safety Properties of Interfaces** 2001, Thomas Ball, Sriram K. Rajamani. Cited 249 (249) times.
- 10. **Software Processes are Software Too** 1987, L. Osterweil. Cited 237 (236) times.

SEN Reviewers Wanted

The following table lists books that are available free to SIGSOFT members for review. Go to http://www.sigsoft.org/SEN/bookreview.html for an up-to-date list, as the list changes frequently, with new reviewer requests, and new books being sent from publishers.

Processes & Engineering		
Agile and Lean Service-Oriented Development: Foundations, Theory, and Practice	Xiaofeng Wang, Nour Ali, Isidro Ramos, and Richard Vidgen	
Disciplined Agile Delivery: A Practitioner's Guide to Agile Software Delivery in the Enterprise	Scott Ambler and Mark Lines	
Design, Architecture, and Po	atterns	
Design Research Through Practice: From the Lab, Field, and Showroom	Ilpo Koskinen, John Zimmerman, Thomas Binder, Johan Redstrom, & Stephan Wensveen	
Guerrilla UX Research Methods: Thrifty, Fast, and Effective User Experience Research Techniques	Russ Unger & Todd Zaki Warfel	
Information Systems Transformation Architecture-Driven Modernization Case Studies	William M. Ulrich and Philip H. Newcomb	
Kansei Engineering and Soft Computing	Ying Dai, Basabi Chakraborty and Minghui Shi	
Patterns of Information Management	Mandy Chessell and Harald Smith	

	T
Sketching User Experiences: The Workbook	Saul Greenberg, Sheelagh Carpendale, Nicolai Marquardt, & Bill Buxton
Software Architecture in Practice, 3rd edition	Len Bass, Paul Clements and Rick Kazman
User Experience in the Age of Sustainability: A Practitioner's Blueprint	Kem-Laurin Kramer
Data	
Database Administration: The Complete Guide to DBA Practices and Procedures, 2nd Ed.	Craig Mullins
Database Design for Mere Mortals: A Hands- On Guide to Relational Database Design, 3rd Edition	Michael J. Hernandez
Next Generation Search Engines: Advanced Models for Information Retrieval	Christophe Jouis, Ismail Biskri, Jean- Gabriel Ganascia and Magali Roux
Test-Driven Database Development: Unlocking Agility	Max Guernsey
Using Open Source Platforms for Business Intelligence: Avoid Pitfalls and Maximize ROI	Lyndsay Wise
Working with Big Data LiveLessons (Video Training): Infrastructure, Algorithms, and Visualizations	Paul Dix
Programming, Tools, & Web De	velopment
Core Java, Volume II Advanced Features, 9th Edition	Cay Horstmann
Creating an MP3 Player with HTML5	Mark Lassoff
Definitive XML Schema, 2nd edition	Priscilla Walmsley
Deploying Rails	Tom Copeland and Anthony Burns
Dreamweaver CS6: The Missing Manual	David Sawyer McFarland
Drupal 7 Explained: Your Step-by-Step Guide	Stephen Burge
FreeBSD Device Drivers: A Guide for the Intrepid	Joseph Kong
Introduction to Combinatorial Testing	D. Richard Kuhn, Raghu N. Kacker, and Yu Lei
Java Reflection LiveLessons (video training)	Paul Anderson
Joomla! Programming	Mark Dexter and Louis Landry
Joomla! Templates	Angie Radtke
	t

Learning jQuery: A Hands-on Guide to Building Rich Interactive Web Front Ends	Ralph Steyer	
Learning CSS3 Animations and Transitions: A Hands-on Guide to Animating in CSS3 with Transforms, Transitions, Keyframe Animations, and JavaScript	Alexis Goldstein	
Letting Go of the Words - Writing Web Content that Works 2nd Edition	Janice (Ginny) Redish	
MySQL, 5th edition	Paul DuBois	
Nagios: Building Enterprise-Grade Monitoring Infrastructures for Systems and Networks, 2nd edition	David Josephsen	
PayPal APIs: Up and Running, 2nd Edition	Matthew Russell	
Physical-Layer Security	Mattieu Block and João Barros	
Practical Object-Oriented Design in Ruby: An Agile Primer	Sandi Metz	
Rails Recipes: Rails 3 Edition	Chad Fowler	
Sams Teach Yourself Node.js in 24 Hours: 24 Proven One-Hour Lessons	George Ornbo	
Scala Fundamentals LiveLessons (Video Training)	Presented by Dan Rosen	
The CSS3 Anthology: Take your sites to New Heights	Rachel Andrew	
The Official Joomla! Book, 2nd Ed.	Jennifer Marriott and Elin Waring	
The Rails View: Create a Beautiful and Maintainable User Experience	Bruce Williams and John Athayde	
Operating Systems		
Inside Windows Debugging: A Practical Guide to Debugging and Tracing Strategies in Windows	Tarik Soulami	
Switching to the Mac: The Missing Manual, Lion Edition	David Pogue	
Mobility		
iPad: The Missing Manual, 4th Edition	J.D. Biersdorfer	
Next Generation Mobile Broadcasting	Edited by David Gomez Barquero	
Cloud Computing, SOA, and SaaS		
Cloud Computing Advancements in Design, Implementation, and Technologies	Shadi Aljawarneh	
Cloud Computing: Concepts, Technology & Architecture	Thomas Erl, Ricardo Puttini, Zaigham Mahmood	

Pamela Isom with Kerrie Holley
Anca Daniela Ionita, Marin Litoiu, and Grace Lewis
Luis M. Vaquero, Juan Cáceres, Juan J. Hierro
l Enterprises
edited by Mubarak S. Al-Mutairi et al.
Madjid Tavana
Margot Bloomstein
Murray E. Jennex
Alan Brown
Whitney Quesenbery and Daniel Szuc
Milan Guenther
Eng K. Chew and Petter Gottschalk
Dirk Nicol

Table 3: SEN books needing to be reviewed