Miguel Velez

Publications

Books

- [36] Sven Apel, Don Batory, Christian Kästner, and Gunter Saake. Feature-Oriented Software Product Lines: Concepts and Implementation. Berlin/Heidelberg, Germany: Springer-Verlag, 2013.
- [35] Terence Parr. The Definitive ANTLR 4 Reference. 2nd. Pragmatic Bookshelf, 2013.
- [34] Amy Brown and Greg Wilson. *The Architecture of Open Source Applications, Volume II.* The Architecture of Open Source Applications v. 2. Kristian Hermansen, 2012.
- [33] Anany V. Levitin. *Introduction to the Design and Analysis of Algorithms (3rd Edition)*. Boston, MA, USA: Addison-Wesley, 2012.
- [32] John Mongan, Noah Suojanen, and Eric Giguere. Programming Interviews Exposed. 2012.
- [31] Kevin P. Murphy. Machine Learning: A Probabilistic Perspective. MIT Press, 2012.
- [30] Amy Brown and Greg Wilson. *The Architecture of Open Source Applications, Volume I.* The Architecture of Open Source Applications v. 1. CreativeCommons, 2011.
- [29] Ian H. Witten, Eibe Frank, and Mark A. Hall. *Data Mining: Practical Machine Learning Tools and Techniques*. 3rd. San Francisco, CA, USA: Morgan Kaufmann Publishers Inc., 2011.
- [28] Frederick P. Brooks. *The Design of Design: Essays from a Computer Scientist*. 1st edition. Addison-Wesley Professional, 2010.
- [27] Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein. *Introduction to Algorithms, Third Edition*. 3rd. MIT Press, 2009.
- [26] Terence Parr. Language Implementation Patterns: Create Your Own Domain-Specific and General Programming Languages. 1st. Pragmatic Bookshelf, 2009.
- [25] Robert Yin. *Case Study Research: Design and Methods*. 4th edition. Applied Social Research Methods. SAGE Publications, 2009.
- [24] Maurice Herlihy and Nir Shavit. *The Art of Multiprocessor Programming*. San Francisco, CA, USA: Morgan Kaufmann Publishers Inc., 2008.
- [23] Terence Parr. The Definitive ANTLR Reference: Building Domain-Specific Languages. Pragmatic Bookshelf, 2007.
- [22] Forrest Shull, Janice Singer, and Dag I.K. Sjøberg. *Guide to Advanced Empirical Software Engineering*. Secaucus, NJ, USA: Springer-Verlag New York, Inc., 2007.

- [21] Alfred V. Aho, Monica S. Lam, Ravi Sethi, and Jeffrey D. Ullman. *Compilers: Principles, Techniques, and Tools (2nd Edition)*. Boston, MA, USA: Addison-Wesley, 2006.
- [20] Christopher M. Bishop. *Pattern Recognition and Machine Learning (Information Science and Statistics)*. Secaucus, NJ, USA: Springer-Verlag New York, Inc., 2006.
- [19] Peter Feiler, Kevin Sullivan, Kurt Wallnau, Richard Gabriel, John Goodenough, Richard Linger, Thomas Longstaff, Rick Kazman, Mark Klein, Linda Northrop, and Douglas Schmidt. *Ultra-Large-Scale Systems: The Software Challenge of the Future*. Software Engineering Institute, Carnegie Mellon University, 2006.
- [18] Douglas C. Montgomery. Design and Analysis of Experiments. John Wiley & Sons, 2006.
- [17] Ramnivas Laddad. *AspectJ in Action: Practical Aspect-Oriented Programming*. Greenwich, CT, USA: Manning Publications, 2003.
- [16] Paul Clements, Bachmann Felix, Len Bass, David Garlan, James Ivers, Reed Little, Paulo Merson, Robert Nord, and Judith Stafford. *Documenting Software Architectures: Views and Beyond*. Pearson Education, 2002.
- [15] David J. C. MacKay. *Information Theory, Inference & Learning Algorithms*. New York, NY, USA: Cambridge University Press, 2002.
- [14] Alan Shalloway and James R. Trott. *Design Patterns Explained: A New Perspective on Object-Oriented Design*. Boston, MA, USA: Addison-Wesley, 2002.
- [13] Clemens Szyperski. Component Software: Beyond Object-Oriented Programming. 2nd. Boston, MA, USA: Addison-Wesley, 2002.
- [12] Krzysztof Czarnecki and Ulrich Eisenecker. *Generative Programming: Methods, Tools, and Applications*. New York, NY, USA: ACM Press/Addison-Wesley, 2000.
- [11] Donald E. Knuth. *The Art of Computer Programming, Volume 3: (2Nd Ed.) Sorting and Searching*. Redwood City, CA, USA: Addison-Wesley, 1998.
- [10] Donald E. Knuth. *The Art of Computer Programming, Volume 1 (3rd Ed.): Fundamental Algorithms*. Redwood City, CA, USA: Addison-Wesley, 1997.
- [9] Donald E. Knuth. *The Art of Computer Programming, Volume 2 (3rd Ed.): Seminumerical Algorithms*. Boston, MA, USA: Addison-Wesley, 1997.
- [8] Thomas M. Mitchell. *Machine Learning*. 1st ed. New York, NY, USA: McGraw-Hill, Inc., 1997.
- [7] Harold Abelson and Gerald J. Sussman. *Structure and Interpretation of Computer Programs*. 2nd. Cambridge, MA, USA: MIT Press, 1996.
- [6] Mary Shaw and David Garlan. *Software Architecture: Perspectives on an Emerging Discipline.* Upper Saddle River, NJ, USA: Prentice-Hall, Inc., 1996.
- [5] Herbert A. Simon. *The Sciences of the Artificial (3rd Ed.)* Cambridge, MA, USA: MIT Press, 1996.

- [4] Frederick P. Brooks Jr. *The Mythical Man-Month*. anniversary. Boston, MA, USA: Addison-Wesley, 1995.
- [3] Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides. *Design Patterns: Elements of Reusable Object-oriented Software*. Boston, MA, USA: Addison-Wesley Longman Publishing Co., Inc., 1995.
- [2] Daniel P. Siewiorek, C. Gordon Bell, and Allen Newell. *Computer structures: principles and examples*. McGraw-Hill computer science series. McGraw-Hill, 1987. Chap. 2, Levels and Abstraction.
- [1] Peter Naur and Brian Randell. Software Engineering: Report of a Conference Sponsored by the NATO Science Committee, Garmisch, Germany, 7-11 Oct. 1968, Brussels, Scientific Affairs Division, NATO. 1969.

Refereed Journal Articles

- [45] Brad A. Myers, Andrew J. Ko, Thomas D. LaToza, and YoungSeok Yoon. "Programmers Are Users Too: Human-Centered Methods for Improving Programming Tools". In *Computer* 49.7 (July 2016), pp. 44–52.
- [44] Brad A. Myers and Jeffrey Stylos. "Improving API Usability". In *Commun. ACM* 59.6 (May 2016), pp. 62–69.
- [43] Jonathan Bell and Gail Kaiser. "Phosphor: Illuminating Dynamic Data Flow in Commodity Jvms". In SIGPLAN Notices 49.10 (Oct. 2014), pp. 83–101.
- [42] Jeffrey M. Barnes, David Garlan, and Bradley Schmerl. "Evolution Styles: Foundations and Models for Software Architecture Evolution". In *Softw. Syst. Model.* (*SoSyM*) 13.2 (May 2014), pp. 649–678.
- [41] Norbert Siegmund, Marko Rosenmüller, Martin Kuhlemann, Christian Kästner, Sven Apel, and Gunter Saake. "SPL Conqueror: Toward Optimization of Non-functional Properties in Software Product Lines". In *Software Quality Journal* 20.3-4 (Sept. 2012), pp. 487–517.
- [40] Holger H. Hoos. "Programming by Optimization". In *Commun. ACM* 55.2 (Feb. 2012), pp. 70–80.
- [39] Thomas Ball, Vladimir Levin, and Sriram K. Rajamani. "A Decade of Software Model Checking with SLAM". In *Commun. ACM* 54.7 (July 2011), pp. 68–76.
- [38] Gordon Bell and Daniel P. Siewiorek. "The Book Computer Structures: Thoughts After 40 Years". In *IEEE Ann. Hist. Comput.* 33.2 (Apr. 2011), pp. 89–95.
- [37] Al Bessey, Ken Block, Ben Chelf, Andy Chou, Bryan Fulton, Seth Hallem, Charles Henri-Gros, Asya Kamsky, Scott McPeak, and Dawson Engler. "A Few Billion Lines of Code Later: Using Static Analysis to Find Bugs in the Real World". In *Commun. ACM* 53.2 (Feb. 2010), pp. 66–75.
- [36] Nathaniel Ayewah, David Hovemeyer, J. David Morgenthaler, John Penix, and William Pugh. "Using Static Analysis to Find Bugs". In *IEEE Softw.* 25.5 (Sept. 2008), pp. 22–29.
- [35] Armstrong Nhlabatsi, Robin Laney, and Bashar Nuseibeh. "Feature Interaction: The Security Threat from within Software Systems". In *Progress in Informatics* 5 (Mar. 2008), pp. 75–89.
- [34] Willemien Visser. "Designing as construction of representations: A dynamic viewpoint in cognitive design research". In *Human–Computer Interaction* 21.1 (Dec. 2006), pp. 103–152.
- [33] Bradley Schmerl, Jonathan Aldrich, David Garlan, Rick Kazman, and Hong Yan. "Discovering Architectures from Running Systems". In *IEEE Trans. Softw. Eng. (TSE)* 32.7 (July 2006), pp. 454–466.
- [32] Daniel P Siewiorek and Priya Narasimhan. "Fault-tolerant architectures for space and avionics applications". In NASA Ames Research (2005).

- [31] Nicolas Ducheneaut. "Socialization in an Open Source Software Community: A Socio-Technical Analysis". In *Comput. Supported Coop. Work* 14.4 (Aug. 2005), pp. 323–368.
- [30] Joseph F. Maranzano, Sandra A. Rozsypal, Gus H. Zimmerman, Guy W. Warnken, Patricia E. Wirth, and David M. Weiss. "Architecture Reviews: Practice and Experience". In *IEEE Softw.* 22.2 (Mar. 2005), pp. 34–43.
- [29] David Garlan, Shang-Wen Cheng, An-Cheng Huang, Bradley Schmerl, and Peter Steenkiste. "Rainbow: Architecture-Based Self-Adaptation with Reusable Infrastructure". In *Computer* 37.10 (Oct. 2004), pp. 46–54.
- [28] Daniel P. Siewiorek, Ram Chillarege, and Zbigniew T. Kalbarczyk. "Reflections on Industry Trends and Experimental Research in Dependability". In *IEEE Trans. Dependable Secur. Comput.* 1.2 (Apr. 2004), pp. 109–127.
- [27] Gregory Tassey. "The economic impacts of inadequate infrastructure for software testing". In *National Institute of Standards and Technology, RTI Project* 7007.011 (2002).
- [26] Audris Mockus, Roy T. Fielding, and James D. Herbsleb. "Two Case Studies of Open Source Software Development: Apache and Mozilla". In *ACM Trans. Softw. Eng. Methodol. (TOSEM)* 11.3 (July 2002), pp. 309–346.
- [25] Andreas Zeller. "Yesterday, My Program Worked. Today, It Does Not. Why?" In SIG-SOFT Softw. Eng. Notes 24.6 (Oct. 1999), pp. 253–267.
- [24] Gail C. Murphy and David Notkin. "Reengineering with Reflexion Models: A Case Study". In *Computer* 30.8 (Aug. 1997), pp. 29–36.
- [23] JC Wang and CF Jeff Wu. "A hidden projection property of Plackett-Burman and related designs". In *Statistica Sinica* (1995), pp. 235–250.
- [22] David Garlan, Robert Allen, and John Ockerbloom. "Architectural Mismatch: Why Reuse Is So Hard". In *IEEE Softw.* 12.6 (Nov. 1995), pp. 17–26.
- [21] Robert E. Kraut and Lynn A. Streeter. "Coordination in Software Development". In *Commun. ACM* 38.3 (Mar. 1995), pp. 69–81.
- [20] Victor R Basili-Gianluigi Caldiera and H Dieter Rombach. "Goal question metric paradigm". In *Encyclopedia of Software Engineering* 1 (1994), pp. 528–532.
- [19] Anthony Hall. "Seven Myths of Formal Methods". In *IEEE Softw.* 7.5 (Sept. 1990), pp. 11–19.
- [18] Bill Curtis, Herb Krasner, and Neil Iscoe. "A Field Study of the Software Design Process for Large Systems". In *Commun. ACM* 31.11 (Nov. 1988), pp. 1268–1287.
- [17] Ralph Johnson and Brian Foote. "Designing Reusable Classes". In *Journal of Object-Oriented Programming SIGS* 1.5 (June 1988), pp. 22–35.
- [16] Barry W. Boehm. "A Spiral Model of Software Development and Enhancement". In *Computer* 21.5 (May 1988), pp. 61–72.

- [15] Watts S. Humphrey. "Characterizing the Software Process: A Maturity Framework". In *IEEE Softw.* 5.2 (Mar. 1988), pp. 73–79.
- [14] David Harel. "Statecharts: A Visual Formalism for Complex Systems". In *Sci. Comput. Program.* 8.3 (June 1987), pp. 231–274.
- [13] Frederick P. Brooks Jr. "No Silver Bullet Essence and Accidents of Software Engineering". In *Computer* 20.4 (Apr. 1987), pp. 10–19.
- [12] E J Weyuker. "Axiomatizing Software Test Data Adequacy". In *IEEE Trans. Softw. Eng.* (TSE) 12.12 (Dec. 1986), pp. 1128–1138.
- [11] E. M. Clarke, E. A. Emerson, and A. P. Sistla. "Automatic Verification of Finite-state Concurrent Systems Using Temporal Logic Specifications". In *ACM Trans. Program. Lang. Syst.* 8.2 (Apr. 1986), pp. 244–263.
- [10] Mary Shaw. "The impact of abstraction concerns on modern programming languages". In *Proceedings of the IEEE* 68.9 (Apr. 1980), pp. 1119–1130.
- [9] Richard A. De Millo, Richard J. Lipton, and Alan J. Perlis. "Social Processes and Proofs of Theorems and Programs". In *Commun. ACM* 22.5 (May 1979), pp. 271–280.
- [8] David L. Parnas. "Designing Software for Ease of Extension and Contraction". In *IEEE Trans. Softw. Eng. (TSE)* SE-5.2 (Mar. 1979), pp. 128–138.
- [7] James C. King. "Symbolic Execution and Program Testing". In *Commun. ACM* 19.7 (July 1976), pp. 385–394.
- [6] W. A. Wulf, R. L. London, and M. Shaw. "An Introduction to the Construction and Verification of Alphard Programs". In *IEEE Trans. Softw. Eng. (TSE)* 2.4 (July 1976), pp. 253–265.
- [5] Frank DeRemer and Hans Kron. "Programming-in-the-Large Versus Programming-in-the-Small". In *IEEE Trans. Softw. Eng. (TSE)* SE-2.2 (June 1976), pp. 80–86.
- [4] Horst W. J. Rittel and Melvin M. Webber. "Dilemmas in a general theory of planning". In *Policy Sciences* 4.2 (June 1973), pp. 155–169.
- [3] C. A. R. Hoare. "Proof of correctness of data representations". In *Acta Informatica* 1.4 (Dec. 1972), pp. 271–281.
- [2] D. L. Parnas. "On the Criteria to Be Used in Decomposing Systems into Modules". In *Commun. ACM* 15.12 (Dec. 1972), pp. 1053–1058.
- [1] Melvin E Conway. "How do committees invent?" In *Datamation* 14.4 (1968), pp. 28–31.

Refereed Conference Publications

- [67] Thanhvu Nguyen, Thanhvu Koc, Javran Cheng, Jeffrey S. Foster, and Adam A. Porter. "iGen Dynamic Interaction Inference for Configurable Software". In Proc. Int'l Symposium Foundations of Software Engineering (FSE). Seattle, WA, USA: IEEE Computer Society, Nov. 2016.
- [66] Larissa Braz, Rohit Gheyi, Melina Mongiovi, Márcio Ribeiro, Flávio Medeiros, and Leopoldo Teixeira. "A Change-centric Approach to Compile Configurable Systems with #Ifdefs". In Proc. Int'l Conf. Generative Programming and Component Engineering (GPCE). Amsterdam, Netherlands: ACM, Oct. 2016, pp. 109–119.
- [65] Jens Meinicke, Chu-Pan Wong, Christian Kästner, Thomas Thüm, and Gunter Saake. "On Essential Configuration Complexity: Measuring Interactions in Highlyconfigurable Systems". In *Proc. Int'l Conf. Automated Software Engineering (ASE)*. Singapore, Singapore: ACM, Sept. 2016, pp. 483–494.
- [64] Lili Wei, Yepang Liu, and Shing-Chi Cheung. "Taming Android Fragmentation: Characterizing and Detecting Compatibility Issues for Android Apps". In *Proc. Int'l Conf. Automated Software Engineering (ASE)*. Singapore, Singapore: ACM, Sept. 2016, pp. 226–237.
- [63] Miguel Velez, Jason Sawin, Alexia Ingerson, and David Chiu. "Improving Bitmap Execution Performance Using Column-Based Metadata". In *The IEEE 4th International Conference on Future Internet of Things and Cloud (FiCloud)*. Vienna, Austria, Aug. 2016. (30% acceptance rate).
- [62] Prasad Kawthekar and Christian Kästner. "Sensitivity Analysis For Building Evolving & Adaptive Robotic Software". In *Proceedings of the IJCAI Workshop on Autonomous Mobile Service Robots (WSR)*. New York, NY, USA, July 2016.
- [61] Bogdan Vasilescu, Kelly Blincoe, Qi Xuan, Casey Casalnuovo, Daniela Damian, Premkumar Devanbu, and Vladimir Filkov. "The Sky is Not the Limit: Multitasking Across GitHub Projects". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Austin, TX, USA: ACM, May 2016, pp. 994–1005.
- [60] Fei Lv, Hongyu Zhang, Jian-guang Lou, Shaowei Wang, Dongmei Zhang, and Jianjun Zhao. "CodeHow: Effective Code Search Based on API Understanding and Extended Boolean Model". In *Proc. Int'l Conf. Automated Software Engineering (ASE)*. Washington, DC, USA: IEEE Computer Society, Nov. 2015, pp. 260–270.
- [59] Atri Sarkar, Jianmei Guo, Norbert Siegmund, Sven Apel, and Krzysztof Czarnecki. "Cost-Efficient Sampling for Performance Prediction of Configurable Systems". In *Proc. Int'l Conf. Automated Software Engineering (ASE)*. Washington, DC, USA: IEEE Computer Society, Nov. 2015, pp. 342–352.
- [58] Michael Eichberg, Ben Hermann, Mira Mezini, and Leonid Glanz. "Hidden Truths in Dead Software Paths". In *Proc. Europ. Software Engineering Conf. Foundations of Software Engineering (ESEC/FSE)*. Bergamo, Italy: ACM, Aug. 2015, pp. 474–484.

- [57] Norbert Siegmund, Alexander Grebhahn, Sven Apel, and Christian Kästner. "Performance-influence Models for Highly Configurable Systems". In *Proc. Europ. Software Engineering Conf. Foundations of Software Engineering (ESEC/FSE)*. Bergamo, Italy: ACM, Aug. 2015, pp. 284–294.
- [56] Christopher Henard, Mike Papadakis, Mark Harman, and Yves Le Traon. "Combining Multi-objective Search and Constraint Solving for Configuring Large Software Product Lines". In Proc. Int'l Conf. Software Engineering (ICSE). Florence, Italy: IEEE Press, May 2015, pp. 517–528.
- [55] Sebastian Elbaum, Gregg Rothermel, and John Penix. "Techniques for Improving Regression Testing in Continuous Integration Development Environments". In *Proc. Int'l Symposium Foundations of Software Engineering (FSE)*. Hong Kong, China: ACM, Nov. 2014, pp. 235–245.
- [54] Fabrice Anon, Vijith Navarathinarasah, Minh Hoang, and Chung-Horng Lung. "Building a Framework for Internet of Things and Cloud Computing". In *Proc. Int'l Conf. on Internet of Things (iThings)*. Taipei, Taiwan: IEEE Computer Society, Sept. 2014, pp. 132–139.
- [53] Max Lillack, Christian Kästner, and Eric Bodden. "Tracking Load-time Configuration Options". In *Proc. Int'l Conf. Automated Software Engineering (ASE)*. Vasteras, Sweden: ACM, Sept. 2014, pp. 445–456.
- [52] David Garlan. "Software Architecture: A Travelogue". In *Proceedings of the on Future of Software Engineering (FOSE)*. Hyderabad, India: ACM, June 2014, pp. 29–39.
- [51] Jianmei Guo, Krzysztof Czarnecki, Sven Apel, Norbert Siegmund, and Andrzej Wasowski. "Variability-aware performance prediction: A statistical learning approach". In Proc. Int'l Conf. Automated Software Engineering (ASE). IEEE Computer Society. Silicon Valley, CA, USA: ACM, Nov. 2013, pp. 301–311.
- [50] Norbert Siegmund, Norbert von Rhein, and Sven Apel. "Family-Based Performance Measurement". In Proc. Int'l Conf. Generative Programming and Component Engineering (GPCE). Indianapolis, IN, USA: ACM, Oct. 2013, pp. 95–104.
- [49] Marcel Böhme, Bruno C. d. S. Oliveira, and Abhik Roychoudhury. "Regression Tests to Expose Change Interaction Errors". In *Proc. Int'l Symposium Foundations of Software Engineering (FSE)*. Saint Petersburg, Russia: ACM, Aug. 2013, pp. 334–344.
- [48] Chang Hwan Peter Kim, Darko Marinov, Sarfraz Khurshid, Don Batory, Sabrina Souto, Paulo Barros, and Marcelo D' Amorim. "SPLat: Lightweight Dynamic Analysis for Reducing Combinatorics in Testing Configurable Systems". In *Proc. Europ. Software Engineering Conf. Foundations of Software Engineering (ESEC/FSE)*. Saint Petersburg, Russia: ACM, Aug. 2013, pp. 257–267.
- [47] Shuai Hao, Ding Li, William G. J. Halfond, and Ramesh Govindan. "Estimating Mobile Application Energy Consumption Using Program Analysis". In *Proc. Int'l Conf. Software Engineering (ICSE)*. San Francisco, CA, USA: IEEE Press, May 2013, pp. 92–101.

- [46] Ali Niknafs and Daniel M. Berry. "The impact of domain knowledge on the effectiveness of requirements idea generation during requirements elicitation". In *Proc. Int'l Requirements Engineering Conf. (RE)*. Chicago, IL, USA: IEEE Computer Society, Sept. 2012, pp. 181–190.
- [45] Dalal Alrajeh, Jeff Kramer, Axel van Lamsweerde, Alessandra Russo, and Sebastián Uchitel. "Generating Obstacle Conditions for Requirements Completeness". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Zurich, Switzerland: IEEE Press, June 2012, pp. 705–715.
- [44] Michaela Greiler, Arie van Deursen, and Margaret-Anne Storey. "Test Confessions: A Study of Testing Practices for Plug-in Systems". In *Proc. Int'l Conf. Software Engineering* (*ICSE*). Zurich, Switzerland: IEEE Press, June 2012, pp. 244–254.
- [43] Abram Hindle, Earl T. Barr, Zhendong Su, Mark Gabel, and Premkumar Devanbu. "On the Naturalness of Software". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Zurich, Switzerland: IEEE Press, June 2012, pp. 837–847.
- [42] Claire Le Goues, Michael Dewey-Vogt, Stephanie Forrest, and Westley Weimer. "A Systematic Study of Automated Program Repair: Fixing 55 out of 105 Bugs for \$8 Each". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Zurich, Switzerland: IEEE Press, June 2012, pp. 3–13.
- [41] David Garlan, Vishal Dwivedi, Ivan Ruchkin, and Bradley Schmerl. "Foundations and Tools for End-user Architecting". In *Proceedings of the Conference on Large-Scale Complex IT Systems: Development, Operation and Management*. Oxford, UK: Springer-Verlag, Mar. 2012, pp. 157–182.
- [40] Laura Dabbish, Colleen Stuart, Jason Tsay, and Jim Herbsleb. "Social Coding in GitHub: Transparency and Collaboration in an Open Software Repository". In *Proc. Conf. Computer Supported Cooperative Work (CSCW)*. Seattle, WA, USA: ACM, Feb. 2012, pp. 1277–1286.
- [39] Joshua Sunshine, Karl Naden, Sven Stork, Jonathan Aldrich, and Éric Tanter. "First-class State Change in Plaid". In *Proc. Int'l Conf. Object-Oriented Programming, Systems, Languages and Applications (OOPSLA)*. Portland, OR, USA: ACM, Oct. 2011, pp. 713–732.
- [38] Zuoning Yin, Ding Yuan, Yuanyuan Zhou, Shankar Pasupathy, and Lakshmi Bairavasundaram. "How Do Fixes Become Bugs?" In *Proc. Europ. Software Engineering Conf. Foundations of Software Engineering (ESEC/FSE)*. Szeged, Hungary: ACM, Sept. 2011, pp. 26–36.
- [37] Andreas Zeller, Thomas Zimmermann, and Christian Bird. "Failure is a Four-letter Word: A Parody in Empirical Research". In *International Conference on Predictive Models in Software Engineering*. Banff, Canada: ACM, Sept. 2011, 5:1–5:7.
- [36] Chris Parnin and Alessandro Orso. "Are Automated Debugging Techniques Actually Helping Programmers?" In *Proc. Int'l Symp. Software Testing and Analysis (ISSTA)*. Toronto, Canada: ACM, July 2011, pp. 199–209.

- [35] Ajinkya Bhave, Bruce Krogh, David Garlan, and Bradley Schmerl. "View Consistency in Architectures for Cyber-Physical Systems". In *International Conference on Cyber-Physical Systems (ICCPS)*. Chicago, IL, USA: IEEE Computer Society Press, Apr. 2011, pp. 151–160.
- [34] Henry Hoffmann, Stelios Sidiroglou, Michael Carbin, Sasa Misailovic, Anant Agarwal, and Martin Rinard. "Dynamic Knobs for Responsive Power-aware Computing". In *Proc. Int'l Conf. Architectural Support for Programming Languages and Operating Systems* (ASPLOS). Newport Beach, CA, USA: ACM, Mar. 2011, pp. 199–212.
- [33] Chang Hwan Peter Kim, Don S. Batory, and Sarfraz Khurshid. "Reducing Combinatorics in Testing Product Lines". In *Proc. Int'l Conf. Aspect-Oriented Software Development (AOSD)*. Porto de Galinhas, Brazil: ACM, Mar. 2011, pp. 57–68.
- [32] Frank Hutter, Holger H. Hoos, and Kevin Leyton-Brown. "Sequential Model-based Optimization for General Algorithm Configuration". In *Proceedings of the International Conference on Learning and Intelligent Optimization*. Rome, Italy: Springer-Verlag, Jan. 2011, pp. 507–523.
- [31] Neil Maiden, Sara Jones, Kristine Karlsen, Roger Neill, Konstantinos Zachos, and Alastair Milne. "Requirements Engineering As Creative Problem Solving: A Research Agenda for Idea Finding". In *Proc. Int'l Requirements Engineering Conf. (RE)*. Sydney, Australia: IEEE Computer Society, Sept. 2010, pp. 57–66.
- [30] Pete Sawyer, Nelly Bencomo, Jon Whittle, Emmanuel Letier, and Anthony Finkelstein. "Requirements-Aware Systems: A Research Agenda for RE for Self-adaptive Systems". In *Proc. Int'l Requirements Engineering Conf. (RE)*. Sydney, Australia: IEEE Computer Society, Sept. 2010, pp. 95–103.
- [29] Dean F. Sutherland and William L. Scherlis. "Composable Thread Coloring". In *Proceedings of the Symposium on Principles and Practice of Parallel Programming*. Bangalore, India: ACM, Jan. 2010, pp. 233–244.
- [28] Jorge Aranda and Gina Venolia. "The Secret Life of Bugs: Going Past the Errors and Omissions in Software Repositories". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Vancouver, Canada: IEEE Computer Society, May 2009, pp. 298–308.
- [27] Uri Dekel and James D. Herbsleb. "Improving API Documentation Usability with Knowledge Pushing". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Vancouver, Canada: IEEE Computer Society Press, May 2009, pp. 320–330.
- [26] Hausi Müller, Mauro Pezzè, and Mary Shaw. "Visibility of Control in Adaptive Systems". In *Proceedings of the International Workshop on Ultra-Large-Scale Software-Intensive Systems (ULSSIS)*. Leipzig, Germany: ACM, May 2008, pp. 23–26.
- [25] Nachiappan Nagappan, Brendan Murphy, and Victor Basili. "The Influence of Organizational Structure on Software Quality: An Empirical Case Study". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Leipzig, Germany: ACM, May 2008, pp. 521–530.

- [24] Jorge Aranda, Steve Easterbrook, and Greg Wilson. "Requirements in the wild: How small companies do it". In *Proc. Int'l Requirements Engineering Conf. (RE)*. New Delhi, India: IEEE Computer Society, Oct. 2007, pp. 39–48.
- [23] Friedrich Steimann. "The Paradoxical Success of Aspect-oriented Programming". In *Proc. Int'l Conf. Object-Oriented Programming, Systems, Languages and Applications (OOP-SLA)*. Portland, OR, USA: ACM, Oct. 2006, pp. 481–497.
- [22] David Garlan and Bradley Schmerl. "Architecture-driven Modelling and Analysis". In *Proceedings on Safety Critical Systems and Software (SCS)*. Melbourne, Australia: Australian Computer Society, Inc., Aug. 2006, pp. 3–17.
- [21] Patrice Godefroid, Nils Klarlund, and Koushik Sen. "DART: Directed Automated Random Testing". In *Proc. Conf. Programming Language Design and Implementation (PLDI)*. Chicago, IL, USA: ACM, June 2005, pp. 213–223.
- [20] Don Batory, Jacob Neal Sarvela, and Axel Rauschmayer. "Scaling Step-wise Refinement". In Proc. Int'l Conf. Software Engineering (ICSE). Portland, OR, USA: IEEE Computer Society, May 2003, pp. 187–197.
- [19] Mary Shaw. "Writing Good Software Engineering Research Papers: Minitutorial". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Portland, Oregon: IEEE Computer Society, May 2003, pp. 726–736.
- [18] Thomas A. Henzinger, Ranjit Jhala, Rupak Majumdar, and Grégoire Sutre. "Lazy Abstraction". In *Proc. Symp. Principles of Programming Languages (POPL)*. Portland, OR, USA: ACM, Jan. 2002, pp. 58–70.
- [17] Dieter Fox. "KLD-Sampling: Adaptive Particle Filters". In *Advances in Neural Information Processing Systems* 14. MIT Press, 2001.
- [16] Axel Van Lamsweerde. "Goal-Oriented Requirements Engineering: A Guided Tour". In *Proc. Int'l Requirements Engineering Conf. (RE)*. Toronto, Canada: IEEE Computer Society, Aug. 2001, pp. 249–262.
- [15] Thomas Ball and Sriram K. Rajamani. "Automatically Validating Temporal Safety Properties of Interfaces". In *Proc. Int'l Workshop on Model Checking of Software (SPIN)*. Toronto, Canada: Springer-Verlag New York, Inc., May 2001, pp. 103–122.
- [14] Michael D. Ernst, Jake Cockrell, William G. Griswold, and David Notkin. "Dynamically Discovering Likely Program Invariants to Support Program Evolution". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Los Angeles, CA, USA: ACM, May 1999, pp. 213–224.
- [13] Peri Tarr, Harold Ossher, William Harrison, and Stanley M. Sutton Jr. "N Degrees of Separation: Multi-dimensional Separation of Concerns". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Los Angeles, CA, USA: ACM, May 1999, pp. 107–119.
- [12] Luca Cardelli. "Program Fragments, Linking, and Modularization". In *Proc. Symp. Principles of Programming Languages (POPL)*. Paris, France: ACM, Jan. 1997, pp. 266–277.

- [11] Colin Potts and Wendy C. Newstetter. "Naturalistic Inquiry and Requirements Engineering: Reconciling Their Theoretical Foundations". In *Proc. Int'l Requirements Engineering Conf. (RE)*. Annapolis, MD, USA: IEEE Computer Society, Jan. 1997, pp. 118–127.
- [10] Michael Jackson. "The World and the Machine". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Seattle, WA, USA: ACM, Apr. 1995, pp. 283–292.
- [9] Orlena Gotel and Anthony Finkelstein. "Contribution Structures". In Proc. Int'l Requirements Engineering Conf. (RE). York, U.K.: IEEE Computer Society, Mar. 1995, pp. 100– 107.
- [8] Ted Biggerstaff. "The Library Scaling Problem and the Limits of Concrete Component Reuse". In *Proc. Int'l Conf. Software Reuse (ICSR)*. Rio de Janeiro, Brazil: IEEE Computer Society, 1994, pp. 102–109.
- [7] Robert Allen and David Garlan. "Formalizing Architectural Connection". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Sorrento, Italy: IEEE Computer Society Press, May 1994, pp. 71–80.
- [6] L. Osterweil. "Software Processes Are Software Too". In Proc. Int'l Conf. Software Engineering (ICSE). Monterey, CA, USA: IEEE Computer Society Press, Mar. 1987, pp. 2–13.
- [5] W. W. Royce. "Managing the Development of Large Software Systems: Concepts and Techniques". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Monterey, CA, USA: IEEE Computer Society Press, Mar. 1987, pp. 328–338.
- [4] Samuel T. Redwine Jr. and William E. Riddle. "Software Technology Maturation". In *Proc. Int'l Conf. Software Engineering (ICSE)*. London, England: IEEE Computer Society Press, Aug. 1985, pp. 189–200.
- [3] D. L. Parnas, P. C. Clements, and D. M. Weiss. "The Modular Structure of Complex Systems". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Orlando, FL, USA: IEEE Press, Mar. 1984, pp. 408–417.
- [2] Mark Weiser. "Program Slicing". In *Proc. Int'l Conf. Software Engineering (ICSE)*. San Diego, CA, USA: IEEE Press, Mar. 1981, pp. 439–449.
- [1] David L. Parnas. "Designing Software for Ease of Extension and Contraction". In *Proc. Int'l Conf. Software Engineering (ICSE)*. Atlanta, GA, USA: IEEE Press, May 1978, pp. 264–277.

Technical Reports

- [3] Robert E. Filman and Daniel P. Friedman. *Aspect-Oriented Programming is Quantification and Obliviousness*. Technical Report. NASA, 2000.
- [2] Rick Kazman, Mark Klein, and Paul Clements. *ATAM: Method for Architecture Evaluation*. Technical Report CMU/SEI-2000-TR-004. Pittsburgh, PA: Software Engineering Institute, Carnegie Mellon University, 2000.
- [1] David Garlan and Mary Shaw. *An Introduction to Software Architecture*. Technical Report CMU-CS-94-166. CMU, Jan. 1994.

Part of Books

[1] Mary Shaw. "The Role of Design Spaces". In Marian Petre and André van der Hoek. *Software Designers in Action: A Human-Centric Look at Design Work*. CRC Press, 2013.

Miscellaneous

- [5] Miguel Velez and Jason Sawin. *Improving the Efficiency of CHA through Parallelization*. Poster. Inquiry at St. Thomas. St. Paul, MN, USA, May 2016.
- [4] Miguel Velez and Jason Sawin. Faster WAH Compression Querying through the Use of Metadata. Poster. Consortium for Computing Sciences in Colleges Midwest Region. 1st place Discovery Track. Evansville, IN, USA, Oct. 2015.
- [3] Miguel Velez and Armando Solar-Lezama. *Simpler Implementation of Sketches through Enhanced Expressiveness*. Poster. MIT Summer Research Poster Session. Cambridge, MA, USA, Aug. 2015.
- [2] Miguel Velez. *Current and Future Relationships Between Robots and Humans*. Summa Cum Laude Paper. Apr. 2015.
- [1] Miguel Velez, Peter Gittins, and Jason Sawin. *Extending SMILES to Encode Reaction Mechanisms*. Poster. Inquiry at St. Thomas. St. Paul, MN, USA, May 2014.