

# Miguel Velez

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## Publications

### Refereed Journal Articles

- [11] 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.
- [10] Joshua Sunshine, Karl Naden, Sven Stork, Jonathan Aldrich, and Éric Tanter. “First-class State Change in Plaid”. In *SIGPLAN Notices* 46.10 (Oct. 2011), pp. 713–732.
- [9] 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.
- [8] 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.
- [7] 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.
- [6] Gail C. Murphy and David Notkin. “Reengineering with Reflexion Models: A Case Study”. In *Computer* 30.8 (Aug. 1997), pp. 29–36.
- [5] David Garlan, Robert Allen, and John Ockerbloom. “Architectural Mismatch: Why Reuse Is So Hard”. In *IEEE Softw.* 12.6 (Nov. 1995), pp. 17–26.
- [4] David Harel. “Statecharts: A Visual Formalism for Complex Systems”. In *Sci. Comput. Program.* 8.3 (June 1987), pp. 231–274.
- [3] 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.
- [2] 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.
- [1] D. L. Parnas. “On the Criteria to Be Used in Decomposing Systems into Modules”. In *Commun. ACM* 15.12 (Dec. 1972), pp. 1053–1058.

## Refereed Conference Publications

- [9] 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.
- [8] 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.
- [7] David Garlan. "Software Architecture: A Travelogue". In *Proceedings of the on Future of Software Engineering (FOSE)*. Hyderabad, India: ACM, June 2014, pp. 29–39.
- [6] 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, 2012, pp. 157–182.
- [5] 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.
- [4] 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.
- [3] 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.
- [2] 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.
- [1] Frank DeRemer and Hans Kron. "Programming-in-the Large Versus Programming-in-the-small". In *Proceedings of the International Conference on Reliable Software*. Los Angeles, CA, USA: ACM, Apr. 1975, pp. 114–121.

## Books

- [3] 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.
- [2] Mary Shaw and David Garlan. *Software Architecture: Perspectives on an Emerging Discipline*. Upper Saddle River, NJ, USA: Prentice-Hall, Inc., 1996.
- [1] 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.

## Technical Reports

- [2] Rick Kazman, Mark Klein, and Paul Clements. *ATAM: Method for Architecture Evaluation*. Tech. rep. 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.

## Miscellaneous

- [5] Miguel Velez and Jason Sawin. *Improving the Efficiency of CHA through Parallelization*. Poster. Inquiry at St. Thomas. 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. 1<sup>st</sup> place Discovery Track. Oct. 2015.
- [3] Miguel Velez and Armando Solar-Lezama. *Simpler Implementation of Sketches through Enhanced Expressiveness*. Poster. MIT Summer Research Poster Session. 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. May 2014.