Evanston, IL 60201
aswin.vandenberg@gmail.com
linkedin.com/in/aswin-van-den-berg-2297993
Dual citizen USA and Netherlands

Aswin A. van den Berg

A skilled software developer/architect with extensive experience leading international teams. Expert in the area of program analysis and program transformation. Successfully delivered numerous modernization and transformation projects migrating in excess of 100 million lines of code. Trained junior developers and lectured programming language courses at Cornell University.

EDUCATION

Ph.D. in Computer Science — **Cornell University (1998), Ithaca, NY**
Thesis: *Data Abstraction by Program Transformation in a Higher-Order Attribute-Grammar Framework*

M.S. in Computer Science — **Utrecht University (1990), The Netherlands**
Thesis: *Attribute Grammar Based Transformation Systems*

SKILLS

Program Transformation, Software Modernization, Project Management, Business-Rule Extraction, Model-Driven Software Development, AI, Aspect Orientation, Test-Driven Development, CI/CD, Lisp, Java, C, C++, UML, COBOL, Python, JavaScript, Node.js, AWS, Azure, Linux, Windows, GitLab, Docker, Kubernetes, SQL, Databases, IBM WatsonX Assistant.

EXPERIENCE

Director, Modernization Architecture — **Updraft (2008 – present), Somerset, NJ**

- Managed 17 people in Ukraine, 5 people in the US and 4 people in India. Leading teams developing automated command-line and web-based tools for understanding and migrating legacy software from on-prem COBOL to cloud-based Java on AWS/Azure.
- Migrated over 100 million lines of customer code.
- Led teams building program transformation technology for automatic code generation from SDL/UML models into highly-efficient distributed Java, C#, C and C++.
- Co-Designed and created the TDL modeling language (ITU Z.109 standard).

Principal Staff Software Engineer — **Motorola Labs (2000 – 2008), Schaumburg, IL**

- Directed the Motorola WEAVR Aspect-Oriented Modeling Project.
  - Resulted in 11 publications and was deployed for Motorola's WikMAX development (a paper was awarded one of the two best papers at the Aspect-Oriented Modeling Workshop at the MoDELS Conference in Jamaica 2005).
- Designed and implemented essential features in the Mousetrap Code Generator, a system for generating highly-efficient distributed code for SDL/UML models.
  - Resulted in 3 publications and was deployed for many Motorola development projects.
- Represented Motorola as the liaison for the 5.5 million euro FP6 EU research project *AMPLE*, *Aspect-Oriented Modeling for Product-line Engineering*.

Senior Software Engineer — **Grammatech (1998 – 2000), Ithaca, NY**

- Implemented Higher-Order Attribute Grammars in the Synthesizer Generator, a tool that generates structure-based editors, and ported the tool from UNIX to Windows.

Lecturer — **Cornell University (1998 – 2000), Ithaca, NY**

- Taught CS211: *Object-Oriented Programming and Data Structures* and CS99: *Fundamental Programming Concepts*.
- Recognized by the Dean of the College of Engineering as one of the best professors of the year.

Visiting Researcher **Cornell University (1990 – 1991), Ithaca, NY**

- Contributed to the Synthesizer Generator research project and implemented its incremental recompilation capability.

Conference Program Committee Member

- MODULARITY, Fakuoka, Japan, 2013.
- MODELSWARD, Barcelona, Spain, 2013.
- MoDELS, Wellington, New Zealand, 2011.
- Aspect-Oriented Modeling Workshop, AOSD, 2012, MODULARITY 2013.
- Transactions on Aspect Oriented Software Development (TAOSD) Journal, Vol 7, 2010.

Other Experience

- Created the US Swing Dance Server website (1994-2000), with over 10,000 clicks/week. Awarded best swing-dance site by Yahoo Internet-Life Magazine (1997) and rated top 5% of all web sites by Lycos.
- Taught swing dancing for 9 years.
- Avid open water swimmer.

PUBLICATIONS

Cottenier, T., van den Berg, A., Weigert, T., *Management of Feature Interactions with Transactional Regions*, MODULARITY AOSD 2012, Potsdam, Germany, March 2012.

Cottenier, T., van den Berg, A., Weigert, T., *Modular Reasoning about Region Composition*, Foundations of Aspect-Oriented Languages Workshop at MODULARITY AOSD 2012, Potsdam, Germany, March 26, 2012.

Cottenier, T., van den Berg, A.,Weigert, T., *Architecture Composition for Concurrent Systems*, International Workshop on Next Generation Modularity Approaches for Requirements and Architecture at MODULARITY AOSD 2012, Potsdam, Germany, March 2012.

Cottenier, T., van den Berg, A., Weigert, T., *Separation of Concerns with Transactional Regions*, SDL 2011, Toulouse, France, July 2011.

Thomas Weigert, Frank Weil, Aswin van den Berg, Paul Dietz, Kevin Marth, *Automated Code Generation for Industrial-Strength Systems*, COMPSAC '08: Proceedings of the 2008 32nd Annual IEEE International Computer Software and Applications Conference, July 2008.

Aswin van den Berg, *Motorola WEAVR: Industrial Application of Aspect Orientation and Model-Driven Engineering Through Joinpoint Inference from Behavioral Specifications*, Invited Presentation at the Technical University of Munich (TUM), 2007.

Thomas Weigert, Frank Weil, Kevin Marth, Aswin van den Berg, Thomas Cottenier, *Practical Experiences in Using Model-Based Systems Engineering with UML,* Journal of Software and Systems Modeling (SoSyM), 2008.

Cottenier, T., van den Berg, A., Elrad, T, *Motorola WEAVR: Aspect Orientation and Model-Driven Engineering*, Journal of Object Technology, Special issue on Aspect-Oriented Modeling, 2007.

Zhang, J., Cottenier, T., van den Berg, A., Gray, J., *Aspect Interference anJournal of Object Technology, Special issue on Aspect-Oriented Modeling, 2007.d Composition in the Motorola Aspect-Oriented Modeling Weaver*, Journal of Object Technology, Special issue on Aspect-Oriented Modeling, 2007.

Aswin van den Berg, Thomas Cottenier, Tzilla Elrad, *Reducing Aspect-Base Coupling through Model Refinement.* Third Workshop on Models and Aspects - Handling Crosscutting Concerns in MDSD at ECOOP, Berlin, Germany, 2007.

Thomas Cottenier, Aswin van den Berg, Tzilla Elrad, *Joinpoint Inference from Behavioral Specification to Implementation.* Main track paper, in Proceedings of the 21st European Conference on Object-Oriented Programming (ECOOP), Berlin, Germany, LNCS 4609, Spring-Verlag, 2007.

Aswin van den Berg, *Motorola WEAVR: Aspect-Oriented Modeling for Simulation and Code Generation,*

tutorial at the European Conference of Object-Oriented Programming (ECOOP), Berlin, Germany, 2007.

Thomas Weigert, Aswin van den Berg, Frank Weil, Paul Dietz, Kevin Marth, *Practical Considerations in Automatic Code Generation.* Book Chapter in Du Zhang, Jeffrey J.P. Tsai *Advances in Machine Learning Applications in Software Engineering*, Published by Idea Group, 2006.

Thomas Cottenier, Aswin van den Berg, Tzilla Elrad, *The Motorola WEAVR: Model Weaving in a Large Industrial Context*. Industry track paper in Proceedings of the International Conference on Aspect-Oriented Software Development, Vancouver, Canada, 2007.

Thomas Cottenier, Aswin van den Berg, Tzilla Elrad, *Stateful Aspects: The Case for Aspect-Oriented Modeling*, AOM Workshop paper at the International Conference on Aspect-Oriented Software Development, Vancouver, Canada, 2007.

Thomas Cottenier, Aswin van den Berg, Tzilla Elrad, *Motorola WEAVR: An Add-In for Aspect-Oriented Modeling in TAU*. Telelogic User Group Conference, Denver, Colorado, USA, 2006.

Thomas Cottenier, Aswin van den Berg, Tzilla Elrad, *Model Weaving: Bridging the Divide between Translationists and Elaborationists*. Workshop on Aspect-Oriented Modeling at the 9th International Conference on Model Driven Engineering Languages and Systems, Milan, Italy, 2006.

Jing Zhang, Thomas Cottenier, Aswin van den Berg, Jeff Gray, *Aspect Interference and Composition in the Motorola Aspect-Oriented Modeling Weaver*. Workshop on Aspect-Oriented Modeling at the 9th International Conference on Model Driven Engineering Languages and Systems, Genova, Italy, 2006.

Thomas Cottenier, Aswin van den Berg, Tzilla Elrad, *Modeling Aspect-Oriented Compositions*. Workshop on Aspect-Oriented Modeling at the 8th International Conference on Model Driven Engineering Languages and Systems, Montego Bay, Jamaica, LNCS 3844, pp. 100-109, Springer-Verlag, 2005.

Aswin A. van den Berg, *Modeling Aspect-Oriented Compositions*, Presentation at the Aspect-Oriented Modeling Workshop at the MoDELS 2005 Conference in Jamaica, 2005.

Aswin A. van den Berg*, Data Abstraction by Program Transformation in a Higher-Order Attribute-Grammar Framework*. Ph.D. Thesis, Cornell University, Published by UMI Dissertation Services # 9900054, Ann Arbor, MI, 1998.

Aswin A. van den Berg*, Program Implementation through Composition of Transforms*. Lecture at Workshop on Formal Foundations of Software Systems in Rio de Janeiro, Brazil, May 3-9, 1997.

Aswin A. van den Berg*, The Polya Transformation System.* Invited presentation at Kestrel Institute, Palo Alto, California, January 1996.

Aswin A. van den Berg*, Incremental Higher Order Attribute Grammars*. Paper presented at Workshop on Incremental Computation and Dynamic Algorithms Dagstuhl, Germany, May 1994.

Harald Vogt, Aswin A. van den Berg and Arend Freije, *Rapid Development of a program Transformation System with Attribute Grammars and Dynamic Transformations*. In Proceedings of the International Workshop on Attribute Grammars and their Applications, pages 101-115, Paris, France, Lecture Notes of Computer Science – 461, 1990.