

**Contact**

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**Education**

*Fall 1998 – Spring 2003* Doctor of Philosophy, School of Information and Computer Sciences, University of California, Irvine. Thesis: *Component-Oriented Programming Languages: Why, What, and How?* Advisor: Prof. Dr. Michael Franz.

*Fall 1998 – Fall 2000* Master of Science (Concentration in Computer Systems and Networking), Department of Information and Computer Science, University of California, Irvine.

*Fall 1990 – Winter 1997* Diplom-Informatiker (Concentration in Technical and Industrial Applications), Department of Computer Science and Mathematics, Munich University of Applied Sciences, Germany. Thesis: *On the Future Development of the Programming Language Oberon-2*. Advisor: Prof. Dr. Klaus Köhler.

**Experience**

*Fall 2008 – present* Director, Johns Hopkins Gaming Lab, Department of Computer Science, Whiting School of Engineering, Johns Hopkins University.

*Summer 2008 – present* Senior Lecturer, Department of Computer Science, Whiting School of Engineering, Johns Hopkins University.

*Summer 2016* Visiting Professor, Computer Science and Mathematics, Munich University of Applied Sciences.

*Fall 2005 – Summer 2008* Lecturer, Department of Computer Science, Whiting School of Engineering, Johns Hopkins University.

*Fall 2002 – Spring 2005* Lecturer, Department of Computer Science and Engineering, Bourns College of Engineering, University of California, Riverside.

*Fall 2002 – Spring 2003* Research Programmer, Prof. Dr. Brett Fleisch, Department of Computer Science and Engineering, Bourns College of Engineering, University of California, Riverside.

- Fall 1998 – Summer 2002* Research Associate, Prof. Dr. Michael Franz, Department of Information and Computer Science, University of California, Irvine.
- Summer 2001* Instructor, Department of Information and Computer Science, University of California, Irvine.
- Fall 1998 – Winter 1999* Teaching Assistant, Department of Information and Computer Science, University of California, Irvine.
- Summer 1998* Consultant and Software Engineer, Development Processes, Internet and Databases. COCOSS GbR, Munich, Germany.
- Winter – Spring 1998* Visiting Researcher, Prof. Dr. Michael Franz, Department of Information and Computer Science, University of California, Irvine.
- Spring – Fall 1997* Software Engineer, Machine Control (Newsroom Equipment and Systems). NEXUS informatics GmbH, Munich, Germany.
- Fall 1993 – Winter 1994* Technical Intern, Software Configuration Management. Sisymed Software GmbH, Munich, Germany.
- Fall 1991 – Winter 1992* Technical Intern, Satellite Systems (Design and Image Analysis). DASA Daimler-Benz Aerospace AG, Munich, Germany.

## Teaching

- Foundations* 600.102: *Foundations of Computer Science* (Spring 2008, Fall 2005); 600.107/108: *Introduction to Programming* (Spring 2009, Summer 2008, Summer 2006); 600.111: *Python Scripting* (Fall 2011); 600.112: *Introduction to Programming for Scientists and Engineers* (Fall 2014, Fall 2012).
- Intermediate* 600.120: *Intermediate Programming* (Summer 2015, Spring 2013, Fall 2012, Spring 2011, Fall 2010, Fall 2009, Fall 2008, Spring 2008, Spring 2007, Fall 2006); 600.226: *Data Structures* (Spring 2017, Fall 2016, Spring 2014, Fall 2013, Summer 2013, Summer 2012, Fall 2008, Fall 2007, Fall 2006, Spring 2006, Fall 2005); CS 14: *Introduction to Data Structures and Algorithms* (Winter 2003, Fall 2002).
- Systems* 600.211: *Unix Systems Programming* (Fall 2011, Fall 2010, Fall 2009, Spring 2008, Spring 2007, Fall 2005); 600.318/418: *Operating Systems* (Fall 2016, Fall 2015, Spring 2014, Spring 2012, Spring 2011, Spring 2010); 600.328/428: *Compilers and Interpreters* (Spring 2017, Spring 2016, Spring 2015, Spring 2013, Spring 2011, Spring 2010, Spring 2009, Fall 2007, Spring 2007, Spring 2006); 600.233/333/433: *Computer Systems Fundamentals* (Spring 2017, Summer 2016, Spring 2016, Fall 2015, Spring 2015, Fall 2014, Summer 2014, Fall 2013, Fall 2012); CS 152: *Compiler Design* (Spring 2005, Winter 2005, Fall 2004, Spring 2004, Winter 2004, Winter 2003); CS 181: *Principles of Programming Languages* (Winter 2004, Fall 2003); ICS 142: *Compilers and Interpreters* (Summer 2001).
- Games* 600.255/256: *Introduction to Video Game Design* (Fall 2016, Fall 2015, Fall 2014, Fall 2013, Fall 2011, Spring 2010, Spring 2009); 600.355: *Video Game Design Project* (Spring 2016 (with Jason Corace/MICA), Spring 2015, Spring 2014 (with Jason Corace/MICA), Spring 2012, Fall 2010, Fall 2009).

- Software* 600.250: *User Interfaces and Mobile Applications* (Spring 2013); CS 180: *Introduction to Software Engineering* (Spring 2005, Fall 2004, Spring 2004, Fall 2003, Spring 2003); CS 100: *Software Construction* (Winter 2005, Fall 2004, Spring 2004, Winter 2004, Fall 2003, Spring 2003).
- Projects* 600.392: *Computer Science Design Project* (Spring 2012); 600.392: *Senior Design Project* (Fall 2008, Fall 2007, Fall 2006, Spring 2006); CS 179E: *Project in Compiler Design* (Spring 2005, Winter 2005).
- Other Courses and Seminars* *Concepts of Modern Programming Languages* (Summer 2016, block course); *Operating Systems* (Spring 2015, special offering); *Structure and Interpretation of Computer Programs* (Spring 2006); *Design Patterns Study Group* (Fall 2005, Spring 2004); *Intensive Programming Workshop* (Winter 2005, Fall 2003).

## Publications

- March 2017 Peter H. Fröhlich, Borja Sotomayor: *Practical Systems Programming in Computer Science Education* (BoF session). Proceedings of the SIGCSE 2017 Technical Symposium on Computer Science Education, Seattle, WA, March 8–11.
- March 2014 Joanne Selinski, Peter H. Fröhlich: *Introduction to Programming for Scientists and Engineers* (BoF session). Proceedings of the SIGCSE 2014 Technical Symposium on Computer Science Education, Atlanta, GA, March 5–8.
- June 2012 Michael J. Reese, Joan Freedman, Peter H. Fröhlich: *Designing to Learn, Designed for Fun: An Undergraduate Video Game Development Course*. Proceedings of the American Society of Engineering Educators Annual Conference & Exposition, San Antonio, TX, June 10–13.
- June 2009 Michael J. Reese, Joan Freedman, Peter H. Fröhlich: *Playing Together: Establishing an Interdisciplinary, Interinstitutional Gaming Initiative*. Proceedings of the New Media Consortium Annual Conference, June 2009.
- June 2008 Peter H. Fröhlich: *Ethics Considered Harmful*. ACM SIGCAS Computers and Society Newsletter, Volume 38, Issue 2, Pages 21–23, June 2008.
- May 2008 Peter H. Fröhlich: *Just say “A Class implements a Data Type”*. Letter to the Editor, Communications of the ACM, Volume 51, Number 1, Page 9, May 2008.
- July 2007 Anwar Adi, Wael Adi, Martin Schüler, and Peter H. Fröhlich: *Demo of Open Counting: A Paper-Assisted Voting System with OMR-Based Public Counting*. Proceedings of the University Voting Systems Competition, Portland, Oregon, July 2007.
- November 2006 Anwar Adi, Wael Adi, Martin Schüler, and Peter H. Fröhlich: *Secure Paper-Assisted Voting System with OMR-Based Counting and Open Verification Scheme*. Proceedings of the International Symposium on System and Information Security, Sao Paulo, Brazil, November 2006.
- April 2005 Peter H. Fröhlich, Andreas Gal, and Michael Franz: *Supporting Software Composition at the Programming-Language Level*. Science of Computer Programming, Special Issue on New Software Composition Concepts, Volume 56, Numbers 1–2, Pages 41–57, April 2005.

- December 2003 Wolfram Amme, Matthew Beers, Niall Dalton, Michael Franz, Peter H. Fröhlich, Vivek Haldar, Andreas Hartmann, Peter S. Housel, Fermin Reig, Jeffery von Ronne, Christian H. Stork, and Sergiy Zhenochin: *Making Mobile Code Both Safe and Efficient*. In J. Lala (Ed.): *OASIS: Foundations of Intrusion Tolerant Systems*, IEEE Computer Society Press, Los Alamitos, CA, Pages 337–358, December 2003.
- October 2003 Peter H. Fröhlich, Andreas Gal, and Michael Franz: *Supporting Software Composition at the Programming-Language Level*. Technical Report 03-22, School of Information and Computer Sciences, University of California, Irvine, October 2003.
- March 2003 Peter H. Fröhlich: *Component-Oriented Programming Languages: Why, What, and How?* PhD Thesis, School of Information and Computer Sciences, University of California, Irvine, March 2003.
- June 2002 Peter H. Fröhlich: *Inheritance Decomposed*. In Andrew Black, Erik Ernst, Peter Grogono, and Markku Sakkinen (Eds.): *Proceedings of The Inheritance Workshop at ECOOP*, Malaga, Spain, June 2002. Technical Report 12-2002, Information Technology Research Institute (ITRI), University of Jyväskylä, Finland, June 2002.
- Andreas Gal, Peter H. Fröhlich, and Michael Franz: *An Efficient Execution Model for Dynamically Reconfigurable Component Software*. In Jan Bosch, Clemens Szyperski, and Wolfgang Weck (Eds.): *Proceedings of The International Workshop on Component-Oriented Programming (WCOP)*, Malaga, Spain, June 2002.
- March 2002 Peter H. Fröhlich, Andreas Gal, and Michael Franz: *On Reconciling Objects, Components, and Efficiency in Programming Languages*. Technical Report 02-12, Department of Information and Computer Science, University of California, Irvine, March 2002.
- October 2001 Peter H. Fröhlich and Michael Franz: *On Certain Basic Properties of Component-Oriented Programming Languages*. In David H. Lorenz, Vugranam C. Sreedhar (Eds.): *Proceedings of the First OOPSLA Workshop on Language Mechanisms for Programming Software Components*, Tampa Bay, FL, October 2001. Technical Report NU-CCS-01-06, College of Computer Science, Northeastern University, Boston, MA, October 2001.
- June 2001 Wolfram Amme, Niall Dalton, Michael Franz, Peter H. Fröhlich, Vivek Haldar, Peter S. Housel, Jeffery von Ronne, Christian H. Stork, and Sergiy Zhenochin: *Project transPROSE: Reconciling Mobile-Code Security With Execution Efficiency*. Proceedings of the Second DARPA Information Survivability Conference and Exposition (DISCEX II), Anaheim, CA, June 2001.
- January 2001 Wolfram Amme, Niall Dalton, Michael Franz, Peter H. Fröhlich, Vivek Haldar, Peter S. Housel, Jeffery von Ronne, Christian H. Stork, and Sergiy Zhenochin: *Project transPROSE: Reconciling Mobile-Code Security With Execution Efficiency*. Technical Report 01-01, Department of Information and Computer Science, University of California, Irvine, January 2001.

- September 2000 [Peter H. Fröhlich](#) and [Michael Franz](#): *Stand-Alone Messages: A Step Towards Component-Oriented Programming Languages*. In Jürg Gutknecht and Wolfgang Weck (Eds.): *Modular Programming Languages* (Proceedings of the Fifth Joint Modular Languages Conference, Zurich, Switzerland, September 2000). Lecture Notes in Computer Science, Volume 1891, Pages 90–103, Springer-Verlag, September 2000.
- July 2000 [Peter H. Fröhlich](#): *Component-Oriented Programming Languages: Messages vs. Methods, Modules vs. Types*. In Wolfgang Goerigk (Ed.): *Programming Languages and Computing Concepts* (Proceedings of the 17th Workshop on Programming Languages and Computing Concepts, Bad Honnef, Germany, May 2000). Technical Report 2007, Department of Computer Science and Applied Mathematics, Christian-Albrechts-University, Kiel, Germany, July 2000.
- June 2000 [Peter H. Fröhlich](#) and [Michael Franz](#): *Stand-Alone Messages: A Step Towards Component-Oriented Programming Languages*. Technical Report 00-18, Department of Information and Computer Science, University of California, Irvine, June 2000.
- April 2000 [Michael Franz](#), [Peter H. Fröhlich](#), and [Thomas Kistler](#): *Towards Language Support for Component-Oriented Real-Time Programming*. Proceedings of the Fifth International Workshop on Object-Oriented Real-Time Dependable Systems (Monterey, California, November 1999). IEEE Computer Society Press, April 2000.
- November 1999 [Peter H. Fröhlich](#) and [Michael Franz](#): *Component-Oriented Programming in Object-Oriented Languages*. Technical Report 99-49, Department of Information and Computer Science, University of California, Irvine, November 1999 (Revised December 1999).
- March 1997 [Peter H. Fröhlich](#): *Projekt Froderon: Zur weiteren Entwicklung der Programmiersprache Oberon-2 (Project Froderon: On the Future Development of the Programming Language Oberon-2)*. Diploma Thesis, Department of Computer Science and Mathematics, Munich University of Applied Sciences, Germany, March 1997.

## Awards, Funding, and Gifts

- Spring 2015 [William H. Huggins](#) *Excellence in Teaching Award*, Whiting School of Engineering. “In recognition of outstanding teaching ... at both the undergraduate and graduate levels.” Funded with approximately \$1,000.
- July 2012 – June 2013 William R. Kenan Jr. Fund, Whiting School of Engineering: *Introduction to Computing for Science and Engineering Majors*. Collaborated with Prof. Dr. [Gregory Hager](#), Dr. [Joanne Selinski](#), and Prof. Dr. [Scott Smith](#) on the proposal. Funded with approximately \$3,000.
- April 2011 [NVIDIA Corporation](#): NVIDIA GeForce GTX 480 graphics card. Unrestricted gift valued at approximately \$500.
- August 2008 [NVIDIA Corporation](#): Four NVIDIA GeForce GTX 280 graphics cards, one high-end EVGA gaming motherboard. Unrestricted gift valued at approximately \$3,000.

- July 2008 – May 2009* Chris Hoehn-Saric Curriculum Enhancement Grant, Center for Educational Resources, Johns Hopkins University, *Video Game Design: An Interdisciplinary Approach*. Funded with approximately \$35,000.
- July 2001 – June 2004* National Science Foundation, CCR-0105710: Program in Operating Systems and Compilers, *Design and Implementation of Component-Oriented Programming Languages*. Collaborated with Prof. Dr. Michael Franz on the proposal. Funded with approximately \$180,000.

## Service

- April 2013 – present* Faculty Advisor, eSports Association, Johns Hopkins University.
- November 2007 – present* Faculty Advisor, Local Student Chapter of Amnesty International, Johns Hopkins University.
- January – May 2016* Faculty Hiring Committee (Systems).
- March – July 2013* Faculty Mentor, Women in Science and Engineering (WISE). Worked with a high-school student from the Garrison Forest School on game programming.
- March 2010* Session Chair, Capstones and Professional Development, SIGCSE 2010 Technical Symposium on Computer Science Education, Milwaukee, WI, March 11, 2010.
- March 2008* Session Chair, Networking, SIGCSE 2008 Technical Symposium on Computer Science Education, Portland, OR, March 14, 2008.
- November 2003 – May 2005* Vice President of Communications, American Federation of Teachers, Local 1966, University of California, Riverside.
- December 2001 – January 2002* Volunteer for “Ask-A-Scientist Night” high school outreach program organized by Prof. Dr. Lidia C. Yoshida.
- January 2000 – January 2002* Executive Committee Member, Graduate Students in Information and Computer Science (GSICS), Department of Information and Computer Science, University of California, Irvine.
- September 1994 – June 1996* Student Representative, Departmental Governing Council, Department of Computer Science and Mathematics, Munich University of Applied Sciences, Germany.

## Societies

- May 2006 – present* Upsilon Pi Epsilon (UPE, YΠE), Johns Hopkins University Chapter
- May 1998 – present* Institute for Electrical and Electronic Engineers (IEEE)
- April 1998 – present* Association for Computing Machinery (ACM)
- 1992 – 1998* Gesellschaft für Informatik (GI), German Association for Computer Science
- 1992 – 1998* Verein Deutscher Ingenieure (VDI), Association of German Engineers