

CV - Sven Seuken

Department of Informatics
University of Zurich
Binzmühlestrasse 14
CH-8050 Zurich, Switzerland

Office: BIN-2.B.02
Phone: +41 44 635 67 48
Email: seuken@ifi.uzh.ch
Web: <http://ifi.uzh.ch/ce>

Research Fields

- **Primary:** Electronic Market Design, Mechanism Design, Algorithmic Game Theory
- **Secondary:** Artificial Intelligence, Multi-Agent Systems, Electronic Commerce

Appointments

- **Assistant Professor (Tenure-Track) of Computation and Economics**, since 09/2011
University of Zurich, Department of Informatics
Founder and Head of the Computation and Economics Research Group
- **Research Intern**, 06/2009 – 09/2009, 07/2010 – 10/2010
Microsoft Research, Redmond, WA, USA
- **Research Intern**, 07/2008 – 11/2008
Microsoft Live Labs, Bellevue, WA, USA
- **Associate Intern**, 07/2006 – 09/2006
McKinsey & Company, Frankfurt, Germany

Education

- **Harvard University, Cambridge, MA** 09/2006 – 05/2011
Ph.D. in Computer Science, May 26, 2011
M.S. in Computer Science, June 5, 2008
Ph.D. Thesis: *Hidden Markets: Designing Efficient but Usable Market-based Systems*
Dissertation Committee: David C. Parkes (chair), Alvin E. Roth, Yiling Chen, Eric Horvitz
- **University of Massachusetts, Amherst, MA** 2004 – 2006
M.S. in Computer Science, May 27, 2006
Advisor: Shlomo Zilberstein
- **University of Freiburg, Germany** 2001 – 2004
Vordiplom (Intermediate Exam) in Computer Science, August 2003

Honors and Awards

2016	Invited to give an <i>Early Career Spotlight Talk</i> at IJCAI'16
2016	Outstanding Senior Program Committee Member Award, IJCAI'16
2013	Google Faculty Research Award; (also listed under grants)
2009 – 2011	Microsoft Research Ph.D. Fellowship
2008	Harvard Teaching Award: Certificate of Distinction in Teaching
2007 – 2008	Herbert S. Winokur, Jr. Fellowship in Decision Sciences (awarded via Harvard)
2006 – 2007	Harvard University Fellowship
2006 – 2011	McKinsey & Company College Fellowship
2004 – 2005	Fulbright Fellowship
2004 – 2005	DAAD Fellowship (declined)
2002 – 2006	Fellowship from the German National Merit Foundation (Studienstiftung des deutschen Volkes)
2003 – 2005	Fellowship from e-fellows.net, awarded by the University of Freiburg for outstanding academic achievement
2000	Valedictorian (best high school diploma), Konrad-Adenauer Gymnasium Kleve

Research Grants

- 2015 – 2018 Principal Investigator (PI); Microsoft Research grant for the project *Preference Elicitation and Mechanism Design for Complex Dynamic Systems* (UK Microsoft Research PhD Scholarship Programme); starting date: 1.10.2015; duration: 3 years; amount: €103,150.
- 2015 – 2018 Co-PI; European Union (EU) Horizon 2020 research grant for the project *Distributed Global Financial Systems for Society*; starting date: 1.3.2015; duration: 3 years; my portion of the grant (approximate): CHF 220,000.
- 2015 – 2018 PI; Swiss National Science Foundation (SNSF) research grant for the project *Trading off Strategyproofness and Efficiency in Matching Markets*; starting date: 1.1.2015; duration: 3 years; amount: CHF 281,436.
- 2014 – 2017 Co-PI; Swiss National Science Foundation (SNSF) research grant for the project *A Market-based Approach for Querying the Web of Data*; starting date: 1.9.2014; duration: 3 years; total amount: CHF 350,016; my portion: CHF 175,008.
- 2013 – 2016 PI; Swiss National Science Foundation (SNSF) research grant for the project *Foundations of Market User Interface Design and Applications to the Smart Grid*; starting date: 1.4.2013; duration: 3 years; amount: CHF 179,600.
- 2013 PI; Google Faculty Research Award for the project *Human Recommender Systems*; starting date: 1.8.2013; duration: unrestricted; amount: \$76,000
- 2012 – 2013 PI; Hasler Foundation research grant for the project *Designing Matching Systems under Computational, Informational, and Behavioral Constraints*; starting date: 1.10.2012; duration: 1 year; amount: CHF 50,000.

Publications (peer-reviewed)

1. **Probably Approximately Efficient Combinatorial Auctions via Machine Learning.** Gianluca Brero, Benjamin Lubin, and Sven Seuken. In *Proceedings of the 31st Conference on Artificial Intelligence (AAAI)*, San Francisco, CA, February 2017.
2. **Finding Clearing Payments in Financial Networks with Credit Default Swaps is PPAD-hard.** Steffen Schuldenzucker, Sven Seuken, and Stefano Battiston. In *Proceedings of the 8th Innovations in Theoretical Computer Science (ITCS) Conference*, Berkeley, USA, January 2017. Working paper version:[\(PDF\)](#)
3. **The Pareto Frontier for Random Mechanisms.** Timo Mennle and Sven Seuken. Extended abstract in *Proceedings of the 17th ACM Conference on Economics and Computation (EC)*, Maastricht, The Netherlands, July 2016. Working paper version:[\(PDF\)](#)
4. **Clearing Payments in Financial Networks with Credit Default Swaps.** Steffen Schuldenzucker, Sven Seuken, and Stefano Battiston. Extended abstract in *Proceedings of the 17th ACM Conference on Economics and Computation (EC)*, Maastricht, The Netherlands, July 2016. Working paper version:[\(PDF\)](#)
5. **Core-Selecting Payment Rules for Combinatorial Auctions with Uncertain Availability of Goods.** Dmitry Moor, Sven Seuken, Tobias Grubenmann, and Abraham Bernstein. In *Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI)*, New York, NY, July 2016.[\(PDF\)](#)
6. **Personalized Hitting Time for Informative Trust Mechanisms Despite Sybils.** Brandon Liu, David C. Parkes, and Sven Seuken. In *Proceedings of the 15th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Singapore, May 2016.[\(PDF\)](#)
7. **It is too Hot: An In-Situ Study of Three Designs for Heating.** Alper T. Alan, Mike Shann, Enrico Costanza, Sarvapali D. Ramchurn, and Sven Seuken. In *Proceedings of the Conference on Human Factors in Computing Systems (CHI)*, San Jose, CA, May 2016.[\(PDF\)](#)

8. **New Core-Selecting Payment Rules with Better Fairness and Incentive Properties.** Benjamin Lubin, Benedikt Bünz, and Sven Seuken. Extended abstract in *Proceedings of the 3rd Conference on Auctions, Market Mechanisms and Their Applications (AMMA)*, Chicago, IL, August 2015. Working paper version: [\(PDF\)](#)
9. **A Double Auction for Querying the Web of Data.** Dmitry Moor, Tobias Grubenmann, Sven Seuken, and Abraham Bernstein. Extended abstract in *Proceedings of the 3rd Conference on Auctions, Market Mechanisms and Their Applications (AMMA)*, Chicago, IL, August 2015. [\(PDF\)](#)
10. **The Power of Local Manipulation Strategies in Assignment Mechanisms.** Timo Mennle, Michael Weiss, Basil Philipp, and Sven Seuken. In *Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI)*, Buenos Aires, Argentina, July 2015. [\(PDF\)](#)
11. **A Faster Core Constraint Generation Algorithm for Combinatorial Auctions.** Benedikt Bünz, Sven Seuken, and Benjamin Lubin. In *Proceedings of the 29th Conference on Artificial Intelligence (AAAI)*, Austin, TX, January 2015. [\(PDF\)](#)
12. **An Axiomatic Approach to Characterizing and Relaxing Strategyproofness of One-sided Matching Mechanisms.** Timo Mennle and Sven Seuken. Extended abstract in *Proceedings of the 15th ACM Conference on Economics and Computation (EC)*, Stanford, CA, June 2014. Working paper version: [\(PDF\)](#)
13. **Adaptive Home Heating under Weather and Price Uncertainty using GPs and MDPs.** Mike Shann and Sven Seuken. In *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Paris, France, May 2014. [\(PDF\)](#)
14. **Sybil-proof Accounting Mechanisms with Transitive Trust.** Sven Seuken and David C. Parkes. In *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Paris, France, May 2014. [\(PDF\)](#)
15. **An Active Learning Approach to Home Heating in the Smart Grid.** Mike Shann and Sven Seuken. In *Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI)*, Beijing, China, August 2013. [\(PDF\)](#)
16. **Market User Interface Design.** Sven Seuken, David C. Parkes, Eric Horvitz, Kamal Jain, Mary Czerwinski, and Desney Tan. In *Proceedings of the 13th ACM Conference on Electronic Commerce (EC)*, Valencia, Spain, June 2012. [\(PDF\)](#)
17. **CrowdManager - Optimal Allocation and Pricing of Crowdsourcing Tasks with Time Constraints.** Patrick Minder, Sven Seuken, Avi Bernstein, Mengia Zollinger. In *Proceedings of the Workshop on Social Computing and User Generated Content (SC)*, Valencia, Spain, June 2012. [\(PDF\)](#)
18. **Sharing in BitTorrent can be Rational.** Mike Ruberry and Sven Seuken. Extended Abstract in *Proceedings of the Second Conference on Auctions, Market Mechanisms and Their Applications (AMMA)*, New York, NY, August 2011. [\(PDF\)](#)
19. **Market User Interface Design.** Sven Seuken, David C. Parkes, Eric Horvitz, Kamal Jain, Mary Czerwinski, and Desney Tan. Extended Abstract in *Proceedings of the Second Conference on Auctions, Market Mechanisms and Their Applications (AMMA)*, New York, NY, August 2011. Working paper version: [\(PDF\)](#)
20. **Incentive-Compatible Escrow Mechanisms.** Jens Witkowski, Sven Seuken, and David C. Parkes. In *Proceedings of the Conference on Artificial Intelligence (AAAI)*, San Francisco, CA, August 2011. [\(PDF\)](#)
21. **On the Sybil-Proofness of Accounting Mechanisms.** Sven Seuken and David C. Parkes. In *Proceedings of the Workshop on the Economics of Networks, Systems, and Computation (NetEcon)*, San Jose, CA, June 2011. [\(PDF\)](#)
22. **Hidden Market Design (Challenge Paper).** Sven Seuken, Kamal Jain, and David C. Parkes. In *Proceedings of the Conference on Artificial Intelligence (AAAI)*, Atlanta, GA, July 2010. [\(PDF\)](#)

23. **Accounting Mechanisms for Distributed Work Systems.** Sven Seuken, Jie Tang, and David C. Parkes. In *Proceedings of the Conference on Artificial Intelligence (AAAI)*, Atlanta, GA, July 2010.[\(PDF\)](#)
24. **Market Design and Analysis for a P2P Backup System.** Sven Seuken, Denis Charles, Max Chickering, and Sidd Puri. In *Proceedings of the ACM Conference on Electronic Commerce (EC)*, Cambridge, MA, June 2010.[\(PDF\)](#)
25. **Hybrid Transitive Trust Mechanisms.** Jie Tang, Sven Seuken, and David C. Parkes. In *Proceedings of the International Conferences on Autonomous Agents and Multiagent Systems (AAMAS)*, Toronto, CA, May 2010.[\(PDF\)](#)
26. **Hidden Markets: UI Design for a P2P Backup Application.** Sven Seuken, Kamal Jain, Desney Tan, Mary Czerwinski. In *Proceedings of the Conference on Human Factors in Computing Systems (CHI)*, Atlanta, GA, April 2010.[\(PDF\)](#)
27. **Designing User Interfaces for Hidden Markets.** Sven Seuken, Denis Charles, Max Chickering, and Sidd Puri. In *Proceedings of the IJCAI Workshop on Intelligence and Interaction*, Pasadena, CA, July 2009.[\(PDF\)](#)
28. **Market Design and Analysis for a P2P Backup System.** Sven Seuken, Denis Charles, Max Chickering, and Sidd Puri. In *Proceedings of the Workshop on the Economics of Networks, Systems, and Computation (NetEcon)*, Stanford, CA, July 2009.[\(PDF\)](#)
29. **Market Design for a P2P Backup System.** Sven Seuken, Denis Charles, Max Chickering, and Sidd Puri. Extended abstract in *Proceedings of the 1st Conference on Auctions, Market Mechanisms and Applications (AMMA)*, Boston, MA, May 2009.[\(PDF\)](#)
30. **Handling Interdependent Values in an Auction Mechanism for Enhanced Bandwidth Allocation in Tactical Data Networks.** Mark Klein, David C. Parkes, Daniel Plakosh, Sven Seuken, and Kurt Wallnau. In *Proceedings of the Workshop on the Economics of Networks, Systems, and Computation (NetEcon)*, Seattle, WA, August 2008.[\(PDF\)](#)
31. **Partially-Synchronized DEC-MDPs in Dynamic Mechanism Design.** Sven Seuken, Ruggiero Cavallo, and David C. Parkes. In *Proceedings of the 23rd Conference on Artificial Intelligence (AAAI)*, Chicago, IL, July 2008.[\(PDF\)](#)
32. **Formal Models and Algorithms for Decentralized Decision Making Under Uncertainty.** Sven Seuken and Shlomo Zilberstein. In *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, 17:2, pp. 190-250, 2008.[\(PDF\)](#)
33. **Improved Memory-Bounded Dynamic Programming for Decentralized POMDPs.** Sven Seuken and Shlomo Zilberstein. In *Proceedings of the 23rd Conference on Uncertainty in Artificial Intelligence (UAI)*, Vancouver, Canada, July 2007.[\(PDF\)](#)
34. **Memory-Bounded Dynamic Programming for DEC-POMDPs.** Sven Seuken and Shlomo Zilberstein. In *Proceedings of the 20th International Joint Conference on Artificial Intelligence (IJCAI)*, Hyderabad, India, January 2007.[\(PDF\)](#)
35. **EMIKA System: Architecture and Prototypic Realization.** Guenter Mueller, Torsten Eymann, Norbert Nopper, and Sven Seuken. In *Proceedings of the IEEE International Conference on Systems, Man and Cybernetics (SMC)*, The Hague, The Netherlands, October 2004.[\(PDF\)](#)

Working Papers

36. **Cloud Pricing: The Spot Market Strikes Back .** Ludwig Dierks and Sven Seuken. July 2016.[\(PDF\)](#)
37. **Trade-offs in School Choice: Comparing Deferred Acceptance, the Naïve and the Adaptive Boston Mechanism.** Timo Mennle and Sven Seuken. March 2016.[\(PDF\)](#)

38. **Hybrid Mechanisms: Trading Off Strategyproofness and Efficiency of Random Assignment Mechanisms.** Timo Mennle and Sven Seuken. February 2016. [\(PDF\)](#)
39. **Behavioral Factors in Market User Interface Design.** Sven Seuken, David C. Parkes, Eric Horvitz, Kamal Jain, Mary Czerwinski, and Desney Tan. Accepted subject to major revisions at *ACM Transactions on Economics and Computation (TEAC)*. Working paper version: [\(PDF\)](#)
40. **Design and Analysis of a Hidden Peer-to-peer Backup Market.** Sven Seuken, Denis Charles, Max Chickering, Mary Czerwinski, Kamal Jain, David C. Parkes, Sidd Puri, and Desney Tan. [\(PDF\)](#)
41. **Work Accounting Mechanisms: Theory and Practice.** Sven Seuken, Michel Meulpolder, Dick H. J. Epema, David C. Parkes, Johan A. Pouwelse, and Jie Tang. [\(PDF\)](#)

Work in Progress (draft available upon request)

42. **An Fast Algorithm for Computing Bayes-Nash Equilibria in Combinatorial Auctions.** Vitor Bosshard, Benedikt Bünz, Benjamin Lubin, and Sven Seuken.
43. **SATS: A Spectrum Auction Test Suite.** Michael Weiss, Benjamin Lubin, and Sven Seuken.
44. **On the Difficulty of Comparing School Choice Mechanisms by Their Vulnerability to Manipulation** Umut Dur, Timo Mennle, Sven Seuken.

Textbook

45. **Economics and Computation.** David C. Parkes and Sven Seuken. *Cambridge University Press*, (forthcoming). www.economicsandcomputation.org

Teaching (at UZH)

1. Lecture: Economics and Computation, Fall 2016.
2. Seminar: Advanced Topics in Economics and Computation, Spring 2016.
3. Lecture: Informatik im Unternehmen/Informatik für Ökonomen I (with ≈ 750 students), Fall 2015.
4. Seminar: Advanced Topics in Economics and Computation, Spring 2015.
5. Lecture: Economics and Computation, Fall 2014.
6. Lecture: Combinatorial Auctions, Spring 2014.
7. Seminar: Advanced Topics in Economics and Computation, Fall 2013.
8. Lecture: Economics and Computation, Spring 2013.
9. Seminar: Advanced Topics in Economics and Computation, Fall 2012.
10. Lecture: Economics and Computation, Spring 2012.
11. Seminar: Topics at the Interface between Computer Science and Economics, Fall 2011.

Advising/Mentoring (at UZH)

- Current Postdocs
 1. Timo Mennle (Postdoc since 3/2016)
- Current PhD Students
 1. Mike Shann, since 12/2011
 2. Gianluca Brero, since 9/2014
 3. Dmitry Moor, since 9/2014
 4. Steffen Schuldenzucker, since 9/2014
 5. Ludwig Dierks, since 10/2015
 6. Vitor Bosshard, since 9/2016

- Graduated PhD Students
 1. Timo Mennle, 01/2012 - 02/2016
- Masters Students
 1. Johannes Hool, 04/2016 - 10/2016
 2. Michael Weiss, 02/2016 - 08/2016
 3. Balthasar Caffisch, 04/2015 - 10/2015
 4. Stefan Cortali, 5/2014 - 11/2014
- Bachelors Students
 1. Andreas Perschak, 05/2015 - 11/2015
 2. Daniel Abächerli 03/2015 - 09/2015, winner of “best BSc thesis prize”
 3. Benedikt Bünz, 3/2014 - 8/2014, winner of “best BSc thesis prize”
 4. Matthias Felix, 3/2014 - 8/2014
 5. Johannes Hool, 3/2014 - 8/2014
 6. Stefan Bublitz, 3/2014 - 8/2014
 7. Michael Weiss, 10/2013 - 3/2014
 8. Balthasar Caffisch, 1/2013 - 5/2013
 9. Basil Philipp, 12/2012 - 5/2013, winner of “best BSc thesis prize”
 10. Jessica Hediger, 10/2012 - 3/2013

Other Employment (not listed above)

06/2013– now	Consultant for BandwidthX, San Diego, CA
01/2014 – 06/2014	Consultant for LzLabs, Zürich, Switzerland
12/2010	Consulting Researcher for Microsoft Research, Redmond, WA
09/2006 – 06/2011	Graduate Research Assistant for David C. Parkes, Harvard University
06/2005 – 06/2006	Graduate Research Assistant for Shlomo Zilberstein, UMass Amherst
02/2002 – 08/2004	Research Assistant for Günter Müller, University of Freiburg
10/2000 – 08/2001	Civil Service (Rheinische Kliniken, Bedburg-Hau)
06/2000 – 05/2003	Web Designer (self-employed)

Patents

- Sven Seuken, Pertti J. Visuri, Johanna K. Visuri, and Dan Zagursky. *Systems and methods for allocating and pricing alternative network access resources with reserve prices*. July 2015. Patent pending.
- Sven Seuken, Pertti J. Visuri, Randy Salo, Christian Van Hamersveld, Johanna K. Visuri, and Dan Zagursky. *Systems and Methods for Allocating Alternative Network Access Resources*. July 2015. U.S. Patent 0189580
- Sven Seuken, Denis Xavier Charles, David Maxwell Chickering, and Siddhartha Puri. *Market Design for a Resource Exchange System*. January 2012. U.S. Patent 8108248.

Professional Services/Memberships

- Member of the Editorial Board of the *Journal of Artificial Intelligence Research (JAIR)* 2014-2017.
- Senior Program Committee Member for IJCAI'16.
- Program Committee Member for EC'16, AAAI'16, EC'15, AAAI'15, EC'14, AAAI'14, EC'13, IJCAI'13, AAAI'13, SCUGC'13, EC'12, AAMAS'12, SCUGC'12, IJCAI'11, AMMA'11.
- Reviewer for: *Journal of Autonomous Agents and Multi-Agent Systems, Economic Theory, Experimental Economics, Electronic Commerce Research, Computer Supported Cooperative Work, Transactions on Cloud Computing, FC'13, ECIS'13, CHI'12, EC'11, AAMAS'11, WINE'10, WWW'10, NESCAI'10, IJCAI'09, AAAI'08, AAMAS'08, NESCAI'08*.

- Organizing Committee Member for the *Multiagent Sequential Decision-Making Workshop at the 8th International Conf. on Autonomous Agents and Multiagent Systems (AAMAS)*, 2009.

Selected Services at UZH

- Departmental Lead for “Computing and Economics” Excellence Topic, 2012 - now
- Faculty delegate for the UZH working group on the “Digital Society Initiative”, 2015/2016
- Founding member of the interdisciplinary Competence Center “Information Technology, Society and Law (ITSL)” at the University of Zurich, 2015 - now.
- Co-founder of the “Interdisciplinary Research Lab on Service, Economics, Management and Computation (SEMCom)” at Zhejiang University in China, in collaboration with the Alibaba Group (Hangzhou, China) and the University of Zurich, 11/2013.
- Member of various Promotion/Hiring Committees, 2014/2015/2016
- Member of Study Program Committee, 2013
- Re-design of Departmental Mentoring Program, 2013
- Department-wide Student Workload Analysis, 2012

Personal Information

- Citizenship: German
- Languages: German (native), English (fluent), French (conversational)