

Lebenslauf

Persönliches

Name: **Felix Brandt**
Geburtstag: 6. Juni 1973
Geburtsort: Freiburg (im Breisgau), Deutschland
Adresse: Institut für Informatik
Lehr- und Forschungseinheit für Theoretische Informatik
Ludwig-Maximilians-Universität München
Oettingenstr. 67
80538 München
Email: brandtf@tcs.ifi.lmu.de
Homepage: <http://www.tcs.ifi.lmu.de/~brandtf>

Ausbildung

2003 **Dr. rer. nat., Informatik, *summa cum laude***
Technische Universität München (TUM)
Titel der Dissertation:
“Fundamental Aspects of Privacy and Deception in Electronic Auctions”
Doktorvater: Prof. Dr. Dr. h.c. mult. W. Brauer, Zweitgutachter: Prof. Dr. M. Bichler

1998 **Diplom, Informatik**
TUM (Hauptfach: Informatik, Nebenfach: Mathematik)
Titel der Diplomarbeit:
“Example Selection for Learning in Automated Theorem Proving”

Forschungstätigkeit

2005– **Emmy-Noether Nachwuchsgruppenleiter (Universität München (LMU))**
PAMAS Research Group, Lehrstuhl für Theoretische Informatik (Prof. Martin Hofmann, Ph.D.)

2004–2005 **Postdoktoraler Forschungsaufenthalt (Stanford University, USA)**
Multiagent Group (Prof. Yoav Shoham, Ph.D.)

2003–2004 **Postdoktoraler Forschungsaufenthalt (Carnegie Mellon University (CMU), USA)**
Agent-Mediated Electronic Marketplaces Group (Prof. Tuomas Sandholm, Ph.D.)

1999–2003 **Wissenschaftlicher Angestellter (TUM)**
Lehrstuhl für Theoretische Informatik und Grundlagen der Künstlichen Intelligenz (Prof. Dr. Dr. h.c. mult. Wilfried Brauer)

Herausgebertätigkeit

2008– **Editorial board member: Mathematical Social Sciences (Elsevier Science)**

Zeitschriftenartikel

12. F. Brandt, F. Fischer, and M. Holzer. Equilibria of graphical games with symmetries. *Theoretical Computer Science*. Accepted subject to minor revision.
11. F. Brandt, M. Brill, F. Fischer, P. Harrenstein, and J. Hoffmann. Computing Shapley's saddles. *ACM SIGecom Exchanges*, 8(2), 2009.
10. F. Brandt. Minimal stable sets in tournaments. 2009. **Under Review**.
9. F. Brandt, F. Fischer, P. Harrenstein, and M. Mair. A computational analysis of the tournament equilibrium set. *Social Choice and Welfare*, 2009. Forthcoming.
8. F. Brandt and P. Harrenstein. Characterization of dominance relations in finite coalitional games. *Theory and Decision*, 2009. Forthcoming.
7. F. Brandt. Some remarks on Dodgson's voting rule. *Mathematical Logic Quarterly*, 55(4):460–463, 2009.
6. F. Brandt, F. Fischer, and P. Harrenstein. The computational complexity of choice sets. *Mathematical Logic Quarterly*, 55(4):444–459, 2009.
5. F. Brandt, F. Fischer, and M. Holzer. Symmetries and the complexity of pure Nash equilibrium. *Journal of Computer and System Sciences*, 75(3):163–177, 2009.
4. F. Brandt, F. Fischer, P. Harrenstein, and Y. Shoham. Ranking games. *Artificial Intelligence*, 173(2):221–239, 2009.
3. F. Brandt and F. Fischer. Computing the minimal covering set. *Mathematical Social Sciences*, 56(2):254–268, 2008.
2. F. Brandt and T. Sandholm. On the existence of unconditionally privacy-preserving auction protocols. *ACM Transactions on Information and System Security*, 11(2), 2008.
1. F. Brandt. How to obtain full privacy in auctions. *International Journal of Information Security*, 5(4):201–216, 2006.

Veröffentlichungen in streng begutachteten Tagungsbänden

33. F. Brandt, F. Fischer, and P. Harrenstein. On the rate of convergence of fictitious play. 2010. **Under Review**.
32. D. Baumeister, F. Brandt, F. Fischer, J. Hoffmann, and J. Rothe. The complexity of computing minimal unidirectional covering sets. In *Proceedings of the 7th International Conference on Algorithms and Complexity (CIAC)*, Lecture Notes in Computer Science (LNCS). **Acceptance rate: 26%**, Springer-Verlag, 2010. Forthcoming.
31. H. Aziz, F. Brandt, and P. Harrenstein. Monotone cooperative games and their threshold versions. In W. van der Hoek and G. A. Kaminka, editors, *Proceedings of the 9th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, **Acceptance rate: 23%**, 2010. Forthcoming.
30. F. Brandt, M. Brill, F. Fischer, and P. Harrenstein. Minimal retentive sets in tournaments. In W. van der Hoek and G. A. Kaminka, editors, *Proceedings of the 9th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, **Acceptance rate: 23%**, 2010. Forthcoming.

29. F. Brandt, M. Brill, E. Hemaspaandra, and L. Hemaspaandra. Bypassing combinatorial protections: Polynomial-time bribery algorithms for single-peaked electorates. 2009. **Under Review**.
28. F. Brandt, F. Fischer, and M. Holzer. On iterated dominance, matrix elimination, and matched paths. In J.-Y. Marion and T. Schwentick, editors, *Proceedings of the 27th International Symposium on Theoretical Aspects of Computer Science (STACS)*, Lecture Notes in Computer Science (LNCS). **Acceptance rate: 23%**, Springer-Verlag, 2010. Forthcoming.
27. F. Brandt, M. Brill, F. Fischer, and J. Hoffmann. The computational complexity of weak saddles. In M. Mavronicolas and V. G. Papadopoulou, editors, *Proceedings of the 2nd International Symposium on Algorithmic Game Theory (SAGT)*, volume 5814 of *Lecture Notes in Computer Science (LNCS)*, pages 238–249. **Acceptance rate: 50%**, Springer-Verlag, 2009.
26. F. Brandt, M. Brill, F. Fischer, and P. Harrenstein. On the complexity of iterated weak dominance in constant-sum games. In M. Mavronicolas and V. G. Papadopoulou, editors, *Proceedings of the 2nd International Symposium on Algorithmic Game Theory (SAGT)*, volume 5814 of *Lecture Notes in Computer Science (LNCS)*, pages 287–298. **Acceptance rate: 50%**, Springer-Verlag, 2009.
25. F. Brandt, M. Brill, F. Fischer, and P. Harrenstein. Computational aspects of Shapley’s saddles. In *Proceedings of the 8th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pages 209–216, **Full paper acceptance rate: 22%**, 2009.
24. F. Brandt, F. Fischer, and M. Holzer. Equilibria of graphical games with symmetries. In C. Papadimitriou and S. Zhang, editors, *Proceedings of the 4th International Workshop on Internet and Network Economics (WINE)*, volume 5385 of *Lecture Notes in Computer Science (LNCS)*, pages 198–209. **Acceptance rate: 32%**, Springer-Verlag, 2008.
23. F. Brandt, F. Fischer, P. Harrenstein, and M. Mair. A computational analysis of the tournament equilibrium set. In D. Fox and C. P. Gomes, editors, *Proceedings of the 23rd AAAI Conference on Artificial Intelligence (AAAI)*, pages 38–43. **Oral presentation acceptance rate: 24%**, AAAI Press, 2008.
22. F. Brandt and F. Fischer. On the hardness and existence of quasi-strict equilibria. In B. Monien and U.-P. Schroeder, editors, *Proceedings of the 1st International Symposium on Algorithmic Game Theory (SAGT)*, volume 4997 of *Lecture Notes in Computer Science (LNCS)*, pages 291–302. **Acceptance rate: 50%**, Springer-Verlag, 2008.
21. F. Brandt and F. Fischer. PageRank as a weak tournament solution. In X. Deng and F. Chung Graham, editors, *Proceedings of the 3rd International Workshop on Internet and Network Economics (WINE)*, volume 4858 of *Lecture Notes in Computer Science (LNCS)*, pages 300–305. **Short paper acceptance rate: 66%**, Springer-Verlag, 2007.
20. F. Brandt and F. Fischer. Computational aspects of covering in dominance graphs. In R. C. Holte and A. Howe, editors, *Proceedings of the 22nd AAAI Conference on Artificial Intelligence (AAAI)*, pages 694–699. **Oral presentation acceptance rate: 27%**, AAAI Press, 2007.
19. F. Brandt, F. Fischer, and P. Harrenstein. The computational complexity of choice sets. In D. Samet, editor, *Proceedings of the 11th Conference on Theoretical Aspects of Rationality and Knowledge (TARK)*, pages 82–91. **Oral presentation acceptance rate: 22%**, ACM Press, 2007.
18. P. Harrenstein, F. Brandt, and F. Fischer. Commitment and extortion. In M. Huhns and O. Shehory, editors, *Proceedings of the 6th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pages 108–115. **Oral presentation acceptance rate: 22%**, ACM Press, 2007.

17. F. Brandt, F. Fischer, and M. Holzer. Symmetries and the complexity of pure Nash equilibrium. In W. Thomas and P. Weil, editors, *Proceedings of the 24th International Symposium on Theoretical Aspects of Computer Science (STACS)*, volume 4393 of *Lecture Notes in Computer Science (LNCS)*, pages 212–223. **Acceptance rate: 15%**, Springer-Verlag, 2007.
16. F. Brandt, F. Fischer, P. Harrenstein, and Y. Shoham. A game-theoretic analysis of strictly competitive multiagent scenarios. In M. Veloso, editor, *Proceedings of the 20th International Joint Conference on Artificial Intelligence (IJCAI)*, pages 1199–1206, **Oral presentation acceptance rate: 15%**, 2007.
15. F. Brandt, T. Sandholm, and Y. Shoham. Spiteful bidding in sealed-bid auctions. In M. Veloso, editor, *Proceedings of the 20th International Joint Conference on Artificial Intelligence (IJCAI)*, pages 1207–1214, **Acceptance rate: 34%**, 2007.
14. F. Brandt, F. Fischer, and Y. Shoham. On strictly competitive multi-player games. In Y. Gil and R. Mooney, editors, *Proceedings of the 21st National Conference on Artificial Intelligence (AAAI)*, pages 605–612. **Oral presentation acceptance rate: 22%**, AAAI Press, 2006.
13. F. Brandt and T. Sandholm. Efficient privacy-preserving protocols for multi-unit auctions. In A. Patrick and M. Yung, editors, *Proceedings of the 9th International Conference on Financial Cryptography and Data Security (FC)*, volume 3570 of *Lecture Notes in Computer Science (LNCS)*, pages 298–312. **Acceptance rate: 24%**, Springer-Verlag, 2005.
12. F. Brandt. Efficient cryptographic protocol design based on distributed El Gamal encryption. In *Proceedings of the 8th International Conference on Information Security and Cryptology (ICISC)*, volume 3935 of *Lecture Notes in Computer Science (LNCS)*, pages 32–47. **Acceptance rate: 18%**, Springer-Verlag, 2005.
11. F. Brandt and T. Sandholm. Unconditional privacy in social choice. In R. van der Meyden, editor, *Proceedings of the 10th Conference on Theoretical Aspects of Rationality and Knowledge (TARK)*, pages 207–218. **Acceptance rate: 32%**, National University of Singapore, 2005.
10. F. Brandt and T. Sandholm. Decentralized voting with unconditional privacy. In F. Dignum, V. Dignum, S. Koenig, S. Kraus, M. P. Singh, and M. Wooldridge, editors, *Proceedings of the 4th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pages 357–364. **Acceptance rate: 24%**, ACM Press, 2005.
9. F. Brandt and T. Sandholm. On correctness and privacy in distributed mechanisms. In H. La Poutré, N. Sadeh, and S. Janson, editors, *Revised selected papers from the 7th AAMAS Workshop on Agent-Mediated Electronic Commerce (AMEC)*, volume 3937 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 212–225, **Acceptance rate: 37%**, 2005.
8. F. Brandt and T. Sandholm. (Im)possibility of unconditionally privacy-preserving auctions. In C. Sierra and L. Sonenberg, editors, *Proceedings of the 3rd International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pages 810–817. **Acceptance rate: 24%**, IEEE Computer Society Press, 2004.
7. F. Brandt. Social choice and preference protection - Towards fully private mechanism design. In N. Nisan, editor, *Proceedings of the 4th ACM Conference on Electronic Commerce*, pages 220–221. **Short paper acceptance rate: 50%**, ACM Press, 2003.
6. F. Brandt. Fully private auctions in a constant number of rounds. In R. N. Wright, editor, *Proceedings of the 7th Annual Conference on Financial Cryptography (FC)*, volume 2742 of *Lecture Notes in Computer Science (LNCS)*, pages 223–238. **Acceptance rate: 32%**, Springer-Verlag, 2003.

5. F. Brandt. Cryptographic protocols for secure second-price auctions. In M. Klusch and F. Zambonelli, editors, *Cooperative Information Agents V*, volume 2182 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 154–165. **Acceptance rate: 40%**, Springer-Verlag, 2001.
4. F. Brandt and G. Weiß. Antisocial agents and Vickrey auctions. In J.-J. Ch. Meyer and M. Tambe, editors, *Intelligent Agents VIII*, volume 2333 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 335–347. **Acceptance rate: 45%**, Springer-Verlag, 2001.
3. F. Brandt and G. Weiß. Vicious strategies for Vickrey auctions. In J. P. Müller, E. Andre, S. Sen, and C. Frasson, editors, *Proceedings of the 5th International Conference on Autonomous Agents*, pages 71–72. **Short paper acceptance rate: 31%**, ACM Press, 2001.
2. F. Brandt, W. Brauer, and G. Weiß. Task assignment in multiagent systems based on Vickrey-type auctioning and leveled commitment contracting. In M. Klusch and L. Kerschberg, editors, *Cooperative Information Agents IV*, volume 1860 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 95–106. **Acceptance rate: 32%**, Springer-Verlag, 2000.
1. S. Schulz and F. Brandt. Using term space maps to capture search control knowledge in equational theorem proving. In A. N. Kumar and I. Russell, editors, *Proceedings of the 12th Florida Artificial Intelligence Research Society Conference (FLAIRS)*, pages 244–248. **Acceptance rate: 50%**, AAAI Press, 1999.

Begutachtete Artikel in informellen Tagungsbänden

5. F. Brandt, F. Fischer, P. Harrenstein, and M. Mair. A computational analysis of the tournament equilibrium set. In U. Endriss and P. Goldberg, editors, *Proceedings of the 2nd International Workshop on Computational Social Choice (COMSOC)*, 2008.
4. F. Brandt and P. Harrenstein. Dominance in social choice and coalitional game theory. In G. Bonanno, B. Löwe, and W. van der Hoek, editors, *Proceedings of the 8th Conference on Logic and the Foundations of Game and Decision Theory (LOFT)*, 2008.
3. F. Brandt, F. Fischer, and P. Harrenstein. The computational complexity of choice sets. In U. Endriss and J. Lang, editors, *Proceedings of the 1st International Workshop on Computational Social Choice (COMSOC)*, 2006.
2. F. Brandt, T. Sandholm, and Y. Shoham. Spiteful bidding in sealed-bid auctions. In P. Gmytrasiewicz and S. Parsons, editors, *Proceedings of the 7th IJCAI Workshop on Game Theoretic and Decision Theoretic Agents (GTDT)*, 2005.
1. F. Brandt. A verifiable, bidder-resolved auction protocol. In R. Falcone, S. Barber, L. Korba, and M. Singh, editors, *Proceedings of the 5th AAMAS Workshop on Deception, Fraud and Trust in Agent Societies (Special Track on Privacy and Protection with Multi-Agent Systems)*, 2002.

Sonstige Veröffentlichungen

17. F. Brandt and P. Harrenstein. Set-rationalizable choice and self-stability. Technical report, <http://arxiv.org/abs/0910.3580>, 2009.
16. F. Brandt. Minimal stable sets in tournaments. Technical report, <http://arxiv.org/abs/0803.2138>, 2009. Presented at the 9th International Meeting of the Society of Social Choice and Welfare.

15. F. Brandt. *Tournament Solutions - Extensions of Maximality and Their Applications to Decision-Making*. Habilitation Thesis, Faculty for Mathematics, Computer Science, and Statistics, University of Munich, 2009.
14. D. Baumeister, F. Brandt, F. Fischer, J. Hoffmann, and J. Rothe. The complexity of computing minimal unidirectional covering sets. Technical report, <http://arxiv.org/abs/0901.3692>, 2009.
13. F. Brandt, F. Fischer, and M. Holzer. On iterated dominance, matrix elimination, and matched paths. Technical Report TR08-077, Electronic Colloquium on Computational Complexity (ECCC), 2008.
12. F. Brandt, F. Fischer, and M. Holzer. Equilibria of graphical games with symmetries. Technical Report TR07-136, Electronic Colloquium on Computational Complexity (ECCC), 2007.
11. F. Brandt, F. Fischer, and P. Harrenstein. Recognizing members of the Tournament Equilibrium set is NP-hard. Technical report, <http://arxiv.org/abs/0711.2961>, 2007.
10. F. Brandt, F. Fischer, and M. Holzer. Symmetries and the complexity of pure Nash equilibrium. Technical Report TR06-091, Electronic Colloquium on Computational Complexity (ECCC), 2006.
9. F. Brandt, T. Sandholm, and Y. Shoham. Spiteful bidding in sealed-bid auctions. In D. Lehmann, R. Müller, and T. Sandholm, editors, *Computing and Markets*, number 05011 in Dagstuhl Seminar Proceedings. Internationales Begegnungs- und Forschungszentrum (IBFI), Schloss Dagstuhl, Germany, 2005.
8. F. Brandt. *Fundamental Aspects of Privacy and Deception in Electronic Auctions*. Doctoral Thesis, Department for Computer Science, Technical University of Munich, 2003.
7. F. Brandt. Private public choice. Technical Report FKI-247-03, Department for Computer Science, Technical University of Munich, 2003. ISSN 0941-6358.
6. F. Brandt. Secure and private auctions without auctioneers. Technical Report FKI-245-02, Department for Computer Science, Technical University of Munich, 2002. ISSN 0941-6358.
5. F. Brandt. Antisocial bidding in repeated Vickrey auctions. Technical Report FKI-241-00, Department for Computer Science, Technical University of Munich, 2000. ISSN 0941-6358.
4. F. Brandt and G. Weiß. Exploring auction-based leveled commitment contracting. Part III: Vickrey-type auctioning. Technical Report FKI-238-00, Department for Computer Science, Technical University of Munich, 2000. ISSN 0941-6358.
3. F. Brandt and G. Weiß. Exploring auction-based leveled commitment contracting. Part II: Dutch-type auctioning. Technical Report FKI-237-00, Department for Computer Science, Technical University of Munich, 2000. ISSN 0941-6358.
2. F. Brandt and G. Weiß. Exploring auction-based leveled commitment contracting. Part I: English-type auctioning. Technical Report FKI-234-99, Department for Computer Science, Technical University of Munich, 1999. ISSN 0941-6358.
1. F. Brandt. Example selection for learning in automated theorem proving. Diploma Thesis, Department for Computer Science, Technical University of Munich, 1998.

Programmkomitee Mitgliedschaften

ECAI 2010

19th European Conference on Artificial Intelligence

AAAI 2010	25th Conference on Artificial Intelligence (Senior PC)
ACM EC 2010	11th Annual ACM Conference on Electronic Commerce
COMSOC 2010	3rd International Workshop on Computational Social Choice
SAGT 2009	2nd International Symposium on Algorithmic Game Theory
TARK 2009	12th Bi-annual Conference on Theoretical Aspects of Rationality and Knowledge
IJCAI 2009	21st International Joint Conference on Artificial Intelligence
AAMAS 2009	8th International Joint Conference on Autonomous Agents and Multiagent Systems
SOFSEM 2009	35th International Conference on Current Trends in Theory and Practice of Computer Science (Special Track on Game Theoretic Aspects of E-Commerce)
CIA 2008	12th International Workshop on Cooperative Information Agents
M-PREF 2008	4th Multidisciplinary Workshop on Advances in Preference Handling
COMSOC 2008	2nd International Workshop on Computational Social Choice
AAAI 2008	23rd Conference on Artificial Intelligence
ACM EC 2008	9th Annual ACM Conference on Electronic Commerce
AAMAS 2008	7th International Joint Conference on Autonomous Agents and Multiagent Systems (Senior PC)
EUMAS 2007	5th European Workshop on Multi-Agent Systems
WINE 2007	3rd International Workshop on Internet and Network Economics
AMEC 2007	9th International Workshop on Agent-Mediated Electronic Commerce
AAAI 2007	22nd Conference on Artificial Intelligence
AAMAS 2007	6th International Joint Conference on Autonomous Agents and Multiagent Systems
ACM EC 2007	8th Annual ACM Conference on Electronic Commerce
AAMAS 2006	5th International Joint Conference on Autonomous Agents and Multiagent Systems
CISC 2005	SKLOIS Conference on Information Security and Cryptology
CEC 2005	7th International IEEE Conference on E-Commerce Technology
CEC 2004	6th International IEEE Conference on E-Commerce Technology
FLAIRS 2002	15th Florida Artificial Intelligence Research Society Conference

Gutachtertätigkeit: Wissenschaftsförderorganisationen

BSF	U.S.-Israel Binational Science Foundation
DFG	Deutsche Forschungsgemeinschaft
NWO	Nederlandse Organisatie voor Wetenschappelijk Onderzoek

Gutachtertätigkeit: Journale

AAMAS	Autonomous Agents and Multi-Agent Systems (Springer)
AIJ	Artificial Intelligence (Elsevier Science)

DKE	Data & Knowledge Engineering (Elsevier Science)
DSS	Decision Support Systems (Elsevier Science)
GEB	Games & Economic Behavior (Elsevier Science)
IPL	Information Processing Letters (Elsevier Science)
IJOC	INFORMS Journal on Computing (INFORMS)
IJGT	International Journal of Game Theory (Springer)
IJPRAI	International Journal of Pattern Recognition and Artificial Intelligence (World Scientific)
JAIR	Journal of AI Research (AAAI Press)
JSS	Journal of Systems and Software (Elsevier Science)
JZUS	Journal of Zhejiang University Science
MSS	Mathematical Social Sciences (Elsevier Science)
RE	Research in Economics (Elsevier Science)
TCS	Journal of Theoretical Computer Science (Elsevier Science)
TDSC	IEEE Transactions on Dependable and Secure Computing (IEEE)
TKDE	IEEE Transactions on Knowledge and Data Engineering (IEEE)
WI	Wirtschaftsinformatik (Vieweg)

Gutachtertätigkeit: Konferenzen (ohne Programmkomitee Mitgliedschaften)

STACS 2010	27th International Symposium on Theoretical Aspects of Computer Science
ICALP 2007	34th International Colloquium on Automata, Languages and Programming
STACS 2007	24th International Symposium on Theoretical Aspects of Computer Science
IJCAI 2007	20th International Joint Conference on Artificial Intelligence
AAAI 2005	20th National Conference on Artificial Intelligence
EC 2005	6th Annual ACM Conference on Electronic Commerce
KI 2002	25th German Conference on Artificial Intelligence
ECAI 2002	15th European Conference on Artificial Intelligence
ICML 2002	19th International Conference on Machine Learning
CIA 2001	5th International Workshop on Cooperative Information Agents

Forschungsprojekte

CFSC	Computational Foundations of Social Choice Universität München Projektleiter und Hauptantragsteller, Koordination durch ESF (European Science
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Foundation), Finanzierung durch DFG , ESRC (Economic and Social Research Council), ISF (Israel Science Foundation), NWO (Nederlandse Organisatie voor Wetenschappelijk Onderzoek), NSF (National Science Foundation), TÜBİTAK (Türkiye Bilimsel ve Teknolojik Araştırma Kurumu), Bewilligung BR 2312/6-1, 2008 bis 2011
Teilnehmer: Ulle Endriss (University of Amsterdam), Jeffrey Rosenschein (Hebrew University, Jerusalem), Jörg Rothe (University of Düsseldorf), Remzi Sanver (Istanbul Bilgi University), Vincent Conitzer (Duke University, Durham), Edith Elkind (University of Southampton), Edith Hemaspaandra (Rochester Institute of Technology), Lane Hemaspaandra (University of Rochester), Jérôme Lang (Université Paul Sabatier), Jean-François Laslier (École Polytechnique, Paris), Nicolas Maudet (Université Paris-Dauphine)
Gesamtfördersumme: € 1.689.206
Individuelle Fördersumme: € 478.850

- PAMAS **Preference Aggregation in Multiagent Systems**
Universität München
Projektleiter, Finanzierung durch DFG Bewilligungen BR 2312/3-1, BR 2312/3-2 und BR 2312/3-3, Oktober 2005 bis September 2010
Fördersumme: € 1.010.273
- SPCP **The Design of Secure Public Choice Protocols**
Carnegie Mellon University (USA) und Stanford University (USA)
Forschungsstipendium, Finanzierung durch DFG Bewilligung BR 2312/1-1, Oktober 2003 bis September 2005
Fördersumme: € 67.408

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- Sonstiges** Förderung im Aktionsplan Informatik (DFG), Sonderform des Emmy-Noether-Programms (2005–2010)
- Organisation (gemeinsam mit V. Conitzer, L. Hemaspaandra, J.-F. Laslier, and W. Zwicker) des Dagstuhl-Seminars “Computational Foundations of Social Choice” (März 2010)
- Best student paper award (ATAL^(*) 2001)
- Podiumsdiskussion Teilnehmer: “The Future of Negotiation” (ATAL^(*) 2001)
3. Platz bei CASC-15, Unit Equality Division (CADE ATP (Automated Theorem Prover) System Competition) (Juli 1998)
- DFG Reisestipendien (AAMAS 2004 und TARK 2005)
- Agentlink Reisestipendium (CIA 2001)
- Session Chair: GAMES 2008 Session “Equilibrium Computation”, AAMAS 2008 Session “Economic Paradigms VIII”, WINE 2007 Session “Mechanism Design II”, INFORMS 2006 Session “The Economic Theory of Auctions I”, ICGT 2006 Session “Computation”, ICISC 2005 Session “Efficient Implementations”
- Veröffentlichung von zwei Artikeln über MC68000 Assembler Programmierung im Computermagazin TOS (1992 und 1993)
- Mitgliedschaften: AAAI (Association for the Advancement of Artificial Intelligence), ACM (Association for Computing Machinery), DHV (Deutscher Hochschulverband),

Econometric Society, Game Theory Society, INFORMS (Institute for Operations Research and the Management Sciences), LogICCC Scientific Committee, Society for Social Choice and Welfare

Vorträge auf internationalen Konferenzen und Workshops

- Dezember 2008 "Equilibria of Graphical Games with Symmetries" (WINE 2008, Shanghai, China)
- Juli 2008 "A Computational Analysis of the Tournament Equilibrium Set" (AAAI 2008, Chicago, USA)
- Juli 2008 "Computational Properties of Quasi-Strict Equilibrium" (GAMES 2008, Chicago, USA)
- Juni 2008 "Minimal Stable Sets in Tournaments" (SCW 2008, Montréal, Canada)
- Dezember 2007 "PageRank as a Weak Tournament Solution" (WINE 2007, San Diego, USA)
- Juni 2007 "Computational Aspects of Covering in Dominance Graphs" (LGS 2007, Bilbao, Spain)
- Juli 2006 "On Strictly Competitive Multi-Player Games" (AAAI 2006, Boston, USA)
- Juli 2006 "Symmetries and Efficient Solvability in Multi-Player Games" (ICGT 2006, Stony Brook, USA)
- Juli 2006 "On Strictly Competitive Multi-Player Games" (ICGT 2006, Stony Brook, USA)
- Dezember 2005 "Efficient Cryptographic Protocol Design Based on Distributed El Gamal Encryption" (ICISC 2005, Seoul, South Korea)
- Juni 2005 "Spiteful Bidding in Sealed-Bid Auctions" (TARK 2005 Rump Session, Singapore, Republic of Singapore)
- Juni 2005 "Unconditional Privacy in Social Choice" (TARK 2005, Singapore, Republic of Singapore)
- März 2005 "Efficient Privacy-Preserving Protocols for Multi-Unit Auctions" (FC 2005, Roseau, Commonwealth Of Dominica)
- Juli 2004 "(Im)Possibility of Unconditionally Privacy-Preserving Auctions" (AAMAS 2004, New York, USA)
- Juli 2004 "On Correctness and Privacy in Distributed Mechanisms" (AMEC 2004, New York, USA)
- Januar 2003 "Fully Private Auctions in a Constant Number of Rounds" (FC 2003, Gosier, Guadeloupe)
- Juli 2002 "A verifiable, bidder-resolved Auction Protocol" (DFTAS 2002, Bologna, Italy)
- September 2001 "Cryptographic Protocols for Secure Second-Price Auctions" (CIA 2001, Modena, Italy)
- August 2001 "Antisocial Agents and Vickrey Auctions" (ATAL^(*) 2001, Seattle, USA)
- Mai 2001 "Vicious Strategies for Vickrey Auctions" (Agents^(*) 2001, Montréal, Canada)

Eingeladene Vorträge

- Januar 2010 "Set-Rationalizable Choice and Self-Stability" (Workshop on Choice Theory, Paris, France)
- Dezember 2009 "Tournament Solutions" (Informatik-Sonderkolloquium, TUM)
- Juni 2009 "Tournament Solutions" (PHAC Workshop, Paris, France)
- Oktober 2008 "Computational Foundations of Social Choice" (LogICCC Launch Conference, Prague, Czech Republic)
- Dezember 2007 "Computing the Minimal Covering Set" (Multiagent Seminar, Stanford)
- Oktober 2007 "The Computational Complexity of Tournament Solutions" (Dagstuhl-Seminar "Computational Issues in Social Choice", Dagstuhl)
- Januar 2007 "How to Aggregate Preferences Without Revealing Them" (School of Computer and Communication Sciences, École Polytechnique Fédérale de Lausanne (EPFL), Schweiz)
- Januar 2007 "Preference Aggregation in Multiagent Systems" (Institut für Angewandte Informatik und Formale Beschreibungsverfahren, Universität Karlsruhe)
- November 2006 "Spiteful Bidding in Sealed-Bid Auctions" (INFORMS Annual Meeting 2006, Pittsburgh, USA)
- Juli 2006 "Spieltheorie in der Informatik" (Tag der Informatiklehrer, LMU)
- November 2005 "How to Aggregate Preferences Without Revealing Them" (International Doctoral Graduate School of Information Management and Market Engineering, Universität Karlsruhe)
- Januar 2005 "Spiteful Bidding in Sealed-Bid Auctions" (Dagstuhl-Seminar "Computing and Markets", Dagstuhl)
- Oktober 2004 "Präferenzbündelung in Multiagentensystemen" (Deutsche Forschungsgemeinschaft (DFG), Tagungshotel Clostermannshof, Niederkassel)
- August 2002 "Kryptographische Protokolle für sichere Auktionen" (Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI), Saarbrücken)

Sonstige Vorträge

- Juli 2008 "Minimal Stable Sets in Tournaments" (Oberseminar Theoretische Informatik, LMU)
- November 2007 "Computational Aspects of Covering in Dominance Graphs" (Oberseminar Theoretische Informatik, LMU)
- November 2006 "On Strictly Competitive Multi-Player Games" (Oberseminar Theoretische Informatik, LMU)
- November 2005 "How to Aggregate Preferences Without Revealing Them" (Oberseminar Theoretische Informatik, LMU)
- Mai 2005 "Ranking Games" (Multiagent Seminar, Stanford)
- Februar 2005 "Spiteful Bidding in Sealed-Bid Auctions" (Multiagent Seminar, Stanford)
- Oktober 2004 "Topics at the Intersection of Mechanism Design and Cryptography" (Multiagent Seminar, Stanford)

Februar 2004	“(Im)Possibility of Unconditional Privacy in Auctions and Voting” (Game Theory Discussion Group, CMU)
Oktober 2003	“Cryptography and Mechanism Design” (Mechanism Design Discussion Group, CMU)
August 2003	“Fundamental Aspects of Privacy and Deception in Electronic Auctions” (Rigorosum, TUM)
Mai 2002	“Kryptographische Protokolle für sichere Auktionen” (Oberseminar KI/Kognition, TUM)
Februar 2001	“Auktionen und antisoziale Agenten” (Oberseminar KI/Kognition, TUM)
Januar 2000	“Joas Handlungstheorie” (Oberseminar KI/Kognition, TUM)
September 1998	“Beispielauswahl für Lernverfahren in automatischen Theorembeweisern” (Oberseminar Beweiser, TUM)
Februar 1997	“Classifier Systeme und genetisches Lernen” (Hauptseminar Maschinelles Lernen, TUM)

Teilnahme an Tagungen

WCT 2010	Workshop on Choice Theory (Paris, France)
PHAC 2009	Workshop on Preference Handling and Aggregation in Combinatorial Domains (Paris, France)
GIBU 2009	Jahrestreffen des GI-Beirats der Universitätsprofessoren (Dagstuhl, Germany)
WINE 2008	4th International Workshop on Internet and Network Economics (Shanghai, China)
LogICCC 2008	LogICCC Launch Conference (Prague, Czech Republic)
GI 2008	38. Jahrestagung der Gesellschaft für Informatik (Munich, Germany)
AAAI 2008	23rd Conference on Artificial Intelligence (Chicago, USA)
GAMES 2008	3rd World Congress of the Game Theory Society (Evanston, USA)
SCW 2008	9th International Meeting of the Society for Social Choice and Welfare (Montréal, Canada)
AAMAS 2008	7th International Joint Conference on Autonomous Agents and Multiagent Systems (Estoril, Portugal)
WINE 2007	3rd International Workshop on Internet and Network Economics (San Diego, USA)
CISC 2007	Dagstuhl-Seminar “Computational Issues in Social Choice” (Dagstuhl, Germany)
LGS 2007	5th International Conference on Logic, Game Theory, and Social Choice (Bilbao, Spain)
INFORMS 2006	INFORMS Annual Meeting 2006 (Pittsburgh, USA)
AAAI 2006	21st Conference on Artificial Intelligence (Boston, USA)
ICGT 2006	17th International Conference on Game Theory (Stony Brook, USA)
GIBU 2006	Jahrestreffen des GI-Beirats der Universitätsprofessoren (Dagstuhl, Germany)

ICISC 2005	8th International Conference on Information Security and Cryptology (Seoul, South Korea)
ST 2005	Herbst-Workshop "Spieltheorie und Ihre Anwendungen" (Munich, Germany)
TARK 2005	10th Bi-annual Conference on Theoretical Aspects of Rationality and Knowledge (Singapore, Republic of Singapore)
FC 2005	9th International Conference on Financial Cryptography and Data Security (Roseau, Commonwealth Of Dominica)
C&M 2005	Dagstuhl-Seminar "Computing and Markets" (Dagstuhl, Germany)
AAMAS 2004	3rd International Joint Conference on Autonomous Agents and Multiagent Systems (New York, USA)
AMEC 2004	6th International Workshop on Agent Mediated Electronic Commerce: Theories for and Engineering of Distributed Mechanisms and Systems (New York, USA)
EC 2004	5th Annual ACM Conference on Electronic Commerce (New York, USA)
AWATP 2003	Aladdin Workshop on Auction Theory and Practice (Pittsburgh, USA)
EC 2003	4th Annual ACM Conference on Electronic Commerce (San Diego, USA)
STOC 2003	35th Annual ACM Symposium on Theory of Computing (San Diego, USA)
FC 2003	7th International Conference on Financial Cryptography (Gosier, Guadeloupe)
AAMAS 2002	1st International Joint Conference on Autonomous Agents and Multiagent Systems (Bologna, Italy)
AMEC 2002	4th International Workshop on Agent Mediated Electronic Commerce: Designing Mechanisms and Systems (Bologna, Italy)
DFTAS 2002	5th International Workshop on Deception, Fraud and Trust in Agent Societies with Special Track on Privacy and Protection with Multi-Agent Systems (Bologna, Italy)
CIA 2001	5th International Workshop on Cooperative Information Agents (Modena, Italy)
IJCAI 2001	17th International Joint Conference on Artificial Intelligence (Seattle, USA)
ATAL 2001	8th International Workshop on Agent Theories, Architectures and Languages ^(*) (Seattle, USA)
Agents 2001	5th International Conference on Autonomous Agents ^(*) (Montréal, Canada)
FLAIRS 1999	12th Florida Artificial Intelligence Research Society Conference (Orlando, USA)
CADE 1998	15th International Conference on Automated Deduction (Lindau, Germany)

Lehre

2008-2009	<p>Vorlesung "Algorithmische Graphentheorie" (gemeinsam mit J. Johannsen) (1x) Wöchentliche Vorlesung (90 min.) und Übung (90 min.)</p> <p>Themen der Vorlesung: Algorithmen und NP-Vollständigkeit, Approximationsalgorithmen, kürzeste Wege, Eulerkreise, Hamiltonkreise, Cliques, unabhängige Mengen, Färbungen, Überdeckungen, Turniergraphen, Matchings, planare Graphen, Baumweite</p>
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- 2007-2008 **Vorlesung "Computational Social Choice" (1x)**
Wöchentliche Vorlesung (90 min.)
Themen der Vorlesung: P und NP, Wahlverfahren, Präferenzen, SCF/SCC/SWF, Satz von May, Satz von Moulin, Punkteverfahren und Condorcet-Verfahren, Fishburns Klassifikation von Condorcet-Verfahren, Satz von McGarvey, Turnierlösungen (Copeland, Good/Schwartz, von Neumann-Morgenstern stabile Mengen, Slater, Uncovered set und Minimal Covering set, Banks, TEQ), Arrows Unmöglichkeitssatz, Dodgsons (Lewis Carroll) und Kemenys Wahlverfahren, Ranking Systems und PageRank
- 2007 **Vorlesung "Multiagentensysteme" (1x)**
Wöchentliche Vorlesung (90 min.) und Übung (90 min.)
Themen der Vorlesung: Präferenzen und Nutzenfunktionen, Spiele in Normalform, Nash Gleichgewichte, Nullsummenspiele, Extensive Spiele, Sozialwahltheorie, Fortgeschrittene Wahlverfahren, Implementierungstheorie, Quasilineare Präferenzen, Auktionstheorie
- 2006–2010 **Hauptseminar "Multiagentensysteme" (1x)**
Wöchentliches Seminar (90 min.); Organisation und Betreuung von Studenten
Themen des Seminars: Normal-form games, Nash equilibria, Extensive-form games, Cooperative game theory, Social choice theory, Implementation theory, Mechanism design, Auction theory
- 2006 **Hauptseminar "Spieltheorie" (1x)**
Wöchentliches Seminar (90 min.); Organisation und Betreuung von Studenten
Themen des Seminars: Normal-form games, Zero-sum games, Nash equilibria, Extensive-form games, Repeated games, Bayesian games, Cooperative game theory, Social choice theory, Mechanism design
- 2002–2003 **Übungsleitung zur Vorlesung "Diskrete Strukturen I" (1x)**
Gestaltung von 13 Übungsblättern inkl. Musterlösung; wöchentliche Zentralübung (45 min.) und Tutorübung (90 min.); Organisation von 28 Tutorübungsgruppen; Gestaltung, Organisation und Korrektur von drei Klausuren (90, 150 und 180 min.) für ca. 500 Studenten (Grundstudium)
Themen der Vorlesung: Kombinatorik (Elementare Zählmethoden und kombinatorische Identitäten), Graphentheorie (Grundlegende Definitionen), Zahlentheorie und Arithmetik, Analyse von Algorithmen (Lösen von Rekursionsgleichungen), Algebraische Strukturen (Elementare Grundlagen aus der Gruppen-, Ring- und Körpertheorie)
- 2002–2003 **Proseminar "Einführung in die Methoden der Künstlichen Intelligenz" (3x)**
Wöchentliches Seminar (90 min.); Betreuung von Studenten (Grundstudium)
Themen des Seminars: Geschichte und philosophische Fragestellungen, Uninformierte und heuristische Suchverfahren, Iterative Verbesserung und Suche in Spielen, Aussagen- und Prädikatenlogik, Inferenz und Deduktion, Planen, Multiagentensysteme, Verteilte Künstliche Intelligenz, Belief-Netze, Entscheidungstheorie, komplexe Entscheidungen, Statistische Lernverfahren, Induktives/wissensbasiertes Lernen, Reinforcement-Lernen, Sprachverarbeitung/Computerlinguistik, Wahrnehmung und Robotik

- 2001–2002 **Tutorübung zur Vorlesung “Diskrete Strukturen I” (1x)**
Wöchentliche Tutorübung (90 min.), Hausaufgabenkorrektur, Mitarbeit bei Klausurkorrekturen
Themen der Vorlesung: Algebraische Strukturen (Elementare Grundlagen aus der Gruppen-, Ring- und Körpertheorie), Kombinatorik (Elementare Zählmethoden und kombinatorische Identitäten), Graphen und Algorithmen (Grundlegende Definitionen, elementare Algorithmen), Zahlentheorie und Arithmetik, Analyse von Algorithmen (Lösen von Rekursionsgleichungen)
- 2000–2001 **Hauptseminar “Agenten in der Informatik” (2x)**
Wöchentliches Seminar (90 min.); Organisation und Betreuung von Studenten
Themen des Seminars: Standard-Architekturen für Agenten und Agenten-Systeme, Standard-Sprachen für die Inter-Agenten-Kommunikation, Verhandlungen zwischen Agenten, Computational Organization und Organisationale Intelligenz, Mobile Agenten, Kooperative Informationsagenten im Internet, Koordination und Kooperation in Mehragentensystemen, Agenten-Fussball (Robocup Simulationsliga)
- 2001 **Tutorübung zur Vorlesung “Einführung in die Informatik IV” (1x)**
Wöchentliche Tutorübung (135 min.); Hausaufgabenkorrektur; Mitarbeit bei Klausurkorrekturen
Themen der Vorlesung: Formale Sprachen und Automaten (Chomsky Hierarchie, Reguläre Sprachen, Kontextfreie Sprachen, Kontextsensitive Sprachen und Typ-0-Sprachen), Berechenbarkeit und Entscheidbarkeit (Intuitive Berechenbarkeit, Turing-Berechenbarkeit, LOOP-, WHILE- und GOTO-Berechenbarkeit, Primitiv rekursive und μ -rekursive Funktionen, Entscheidbarkeit, Halteproblem), Algorithmen und Datenstrukturen (Analyse von Algorithmen, Sortierverfahren, Suchverfahren, Mengendarstellungen (Union-Find), Graphalgorithmen), Komplexitätstheorie (Definition von Komplexitätsklassen, NP-Vollständigkeit)
- 1999–2001 **Tutorübung zur Vorlesung “Einführung in die Informatik III” (2x)**
Wöchentliche Tutorübung (90 min.), Hausaufgabenkorrektur, Mitarbeit bei Klausurkorrekturen
Themen der Vorlesung: Grundlagen (Rechner und hardwarenahe Programme), Verallgemeinerungen der Programm- und Datenstrukturen, Grundlagenprobleme paralleler Prozesse/Abläufe (wechselseitiger Ausschluss, Synchronisation, Verklemmung), Realisierung und Organisation paralleler Abläufe (Prozessrealisierung und Prozessorverwaltung), Speicherverwaltung (virtueller Speicher, Verwaltungsstrategien), Prozesskommunikation, Aufgaben und Arbeitsweise eines Übersetzers
- 1999–2003 **Proseminar “UNIX-Tools” (7x)**
Wöchentliches Seminar (90 min.); Betreuung von Studenten (Grundstudium)
Themen des Seminars: Einführung in UNIX, Shell Programmierung, LaTeX, Emacs, Entwicklungsumgebungen (Rcs, Cvs), vi, Maple, Make, Gnuplot, Java (javac, jdb, javadoc, jws), Tcl/Tk, reguläre Ausdrücke (grep, sed, awk), Perl, Netz (ssh, telnet, mail, news, procmail, ppp), GPL (Free Software und octave), HTML

Betreuung von Studenten und Doktoranden

- 10/2008– Brill, Markus (Doktorand)

- 10/2005–07/2009 Fischer, Felix: “Complexity Results for some Classes of Strategic Games” (Doktorand, Promotionskommission: Prof. Martin Hofmann, Prof. Lane Hemaspaandra, Priv.-Doz. Martin Lange, Prof. Martin Schottenloher)
- 04/2008–10/2008 Wassenberg, Philip: “Implementation and evaluation of cryptographic auction protocols” (Diplomarbeit)
- 10/2007–07/2008 Waldemar, Eimund: “The computational complexity of Nash equilibria in games with few outcomes” (Diplomarbeit)
- 10/2007– Mair, Maximilian: “Implementing the tournament equilibrium set”
- 10/2007–11/2008 Bluhme, Sarah: “A graphical tool for computing tournament solutions” (Fortgeschrittenenpraktikum (FoPra))
- 09/2006–05/2007 Wassenberg, Philip: “Implementation of a cryptographic comparison-protocol” (Fortgeschrittenenpraktikum (FoPra))
- 07/2006–12/2006 Meier, Maximilian: “Computing Nash equilibria of normal-form games using support enumeration” (Fortgeschrittenenpraktikum (FoPra))
- 03–09/2002 Chen, Willy: “Kryptographische Auktionsprotokolle – Implementierung und Analyse” (Systementwicklungsprojekt (SEP))

Betreuung von post-doktoralen Wissenschaftlern

- 09/2009– Aziz, Haris
- 02/2006– Harrenstein, Paul
- 02/2009–12/2009 Sørensen, Troels Bjerre

München, 22. Februar 2010

(*)Agents, ATAL und ICMAS sind seit 2002 in der AAMAS Konferenz vereint.