

Prof. Dr. Johannes Fürnkranz
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Curriculum Vitae

Vita

Prof. Johannes Fürnkranz obtained Master Degrees from the Technical University of Vienna and the University of Chicago, and a Ph.D. from the Technical University of Vienna with a Thesis on *Pruning Algorithms for Rule Learning*. Most of his thesis work was conducted at the Austrian Research Institute for Artificial Intelligence, with which he was affiliated from 1992 to 2002. In 1997, he received a Erwin Schrödinger-Stipendium of the Austrian *Fonds zur Förderung der wissenschaftlichen Forschung* allowing him to spend a post-doc year at Tom Mitchell's research group at Carnegie Mellon University. In 2001, he received his habilitation in Artificial Intelligence, and in 2002, he won a prestigious APART stipend of the Austrian Academy of Sciences. Since January 2004, he is a full Professor for Knowledge Engineering at the TU Darmstadt.

His main research interests are machine learning and data mining, in particular inductive rule learning, multi-label classification and preference learning, and their applications in game playing, web mining, and scientific data mining. He helped to shape the field of preference learning by co-editing a book on this subject, and published a monograph on inductive rule learning. He has published more than 100 peer-reviewed scientific articles in conferences and journals in these areas. Fourteen of his articles have received more than 100 citations including three with more than 300 citations. According to Google Scholar, the h-Index of his publications is 34.

Since 2015, he serves as the editor-in-chief of *Data Mining and Knowledge Discovery*, the most traditional and renown journal in this area. He is also a long-time action editor for *Machine Learning*, and current or past editorial board member of several other well-known journals. He is a regular member of program committees of premier conferences in the areas of machine learning, data mining, information retrieval, and artificial intelligence, and was nominated "best reviewer" at two Machine Learning conferences, "outstanding PC member" at the AAAI conference, and "outstanding editor" of the *Machine Learning* journal. In 2006, he was co-chairing the *6th European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* in Berlin, the largest international joint conference in the areas of machine learning and data mining. He also served on the steering committee and as the proposals chair (responsible for the selection of upcoming conference venues) of this conference series. In 2010, he served as the co-chair of the *27th International Conference on Machine Learning* (Haifa, Israel), the most renown and traditional conference in this area, and in 2013 as the program co-chair of the *16th International Conference on Discovery Science* (Singapore).

From April 2011 – March 2013, Prof. Fürnkranz served a 2-year term as the *Dean of Study* for the Faculty of Computer Science of the TU Darmstadt.

Personal

Born: 20. 8. 1966, Mistelbach, Austria
Citizenship: Austrian
Family Status: married to *Alexia Fürnkranz-Prskawetz*, Professor at TU Vienna
daughter *Sara Fürnkranz* (born 10. 8. 2001)
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Education

- 1972–1976 • Primary School, Laa/Thaya, Austria
1976–1984 • High School (*Gymnasium*), BG+BRG Laa/Thaya, Austria
▷ 13. 06. 1984: Matura, passed with honors
1984–1991 • Study of *Computer Science* (Informatik) and *Technical Mathematics* (Technische Mathematik) at the *Vienna University of Technology*, Wien, Austria
▷ 29. 01. 1987: 1. Diplomprüfung Technical Mathematics
▷ 23. 10. 1989: 1. Diplomprüfung Computer Science
▷ 17. 06. 1991: 2. Diplomprüfung Computer Science
▷ Diploma Thesis on “Induktives Lernen durch Generieren von Decision Trees”, in co-operation with the *International Institute for Applied Systems Analysis*. Supervisors: Lothar Winkelbauer (IIASA), Wolfgang Nejdl, Georg Gottlob
▷ 27. 06. 1991: Sponsion, Academic Degree *Diplom-Ingenieur*
1991–1992 • Study of *Artificial Intelligence* at the *University of Chicago*, USA
Advisor: Kris Hammond
▷ 28. 08. 1992: Convocation, Academic Degree *Master of Science*
1992–1994 • Doctoral Studies at the *TU Vienna*, in collaboration with the *Dept. Medical Cybernetics and Artificial Intelligence, University of Vienna*.
Advisor: Gerhard Widmer, Committee: Robert Trappl, Igor Mozetič
▷ Ph. D. Thesis on “Efficient Pruning Methods for Relational Learning”
▷ 11. 11. 1994: Thesis Defence, passed with honors
▷ 16. 12. 1994: Promotion, Academic Degree *Doctor Technicae*
1997–1998 • Post-Doctoral year at *Carnegie-Mellon University*, Pittsburgh, USA
Supervisor: Tom Mitchell
2001 • Habilitation at the *Faculty of Science and Informatics* of the *TU Vienna*,
▷ Habilitation Thesis on “Inductive Rule Learning for Data and Web Mining”
▷ 23. 11. 2001: Habilitation Colloquium
▷ *venia legendi* for “Artificial Intelligence”
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Employment History

- 1987–1989
 - Summer Jobs at *IBM Austria*, Wien
 - ▷ Porting of an application from MVS/AS to VM/AS and SQL/DS
 - ▷ AS Development for OMV (Austrian oil and gas company)
 - ▷ AS Training of other interns
 - 1990–1991
 - Associated Research Assistant at the *International Institute for Applied Systems Analysis (IIASA)*, Laxenburg, Austria
 - ▷ implementation of a decision-tree learning algorithm as part of Master’s thesis
 - 1991–1992
 - Research Assistant at *University Chicago’s Artificial Intelligence Laboratory*
 - ▷ mostly course-work with an emphasis on intelligent agents, case-based reasoning, and intelligent information retrieval
 - 1992–2002
 - Researcher at the *Austrian Research Institute for Artificial Intelligence*, Wien
 - ▷ various basic and applied machine learning research projects both national and EC-wide (see below)
 - 1995
 - Zivildienst (civilian service, alternative to mandatory military service)
 - ▷ driving and scheduling ambulances (*Arbeitersamariterbund* Purkersdorf)
 - 1997–1998
 - Visiting Scientist at *Carnegie Mellon University’s Center for Automated Learning and Discovery*
 - ▷ working in Tom Mitchell’s text learning group
 - 2002–2003
 - APART Stipend from the *Austrian Academy of Sciences*.
 - ▷ working on “Fundamentals of Rule Learning”.
 - 2004–
 - Professor (C3) for Knowledge Engineering at the TU Darmstadt
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Projects

Acquired Funding

- 2015–
 - Adaptive Information Preparation from Heterogeneous Sources (DFG research training program, TUD KE share \approx 350 k€)
- 2015–
 - Predictive Maintenance (industrial project, TUD KE share \approx 138 k€)
- 2013–2015
 - An Optic’s Life (BMBF project, TUD share \approx 230 k€)
- 2013–2015
 - Knowledge Discovery in Scientific Literature (Ph.D. Program funded by DIPF, TUD KE share \approx 100 k€)
- 2012–2014
 - Reinforcement Learning with Qualitative Feedback (DFG project, TUD KE share \approx 200 k€)
- 2009
 - Multilabel Classification Methods for Problems with Large Number of Labels (DAAD/IKYDA travel support, TUD KE share \approx 5k€)
- 2007–2012
 - Learning by Pairwise Comparison for Problems with Structured Output Spaces (DFG project, TUD KE share \approx 250 k€)
- 2006–2012
 - GloCSyn: Towards A Synthesis of Local and Global Pattern Discovery (DFG project, TUD KE share \approx 600 k€)
- 2006–2008
 - ALIS—Automated Legal Intelligent System (EC IST, 6th Framework, TUD KE share \approx 255 k€)

Personal Stipends

- 2002–2005
 - Fundamentals of Rule Learning (Apart Stipendium, Austrian Academy of Sciences)
- 1997–1998
 - Intelligent Data Analysis for Information Retrieval on the World-Wide Web (Erwin Schrödinger Stipendium, Austrian Science Fund (FWF))
- 1991
 - Stipend from University of Chicago

Projects (continued)

Project Participation

- 1991–1992 • ALEX: Automatic Learning Environment for Expert Systems (national project at IIASA)
 - 1992–1994 • Machine Learning and Qualitative Models (national FWF project)
 - Investigation of the Potential Contribution of AI-Methods to the Avoidance of Crises and Wars (national project for the Austrian Federal Ministry for Science, Research, and the Arts)
 - 1996–1997 • Knowledge Discovery in Databases via Inductive Logic Programming (national FWF project)
 - Intelligent Data Analysis in Steel Casting (industrial project)
 - 1998–1999 • InQuaC: Innovative Quality Control Methods for Rotating Machines Using Artificial Intelligence Methods (EC Brite-Euram III RTD project)
 - NAMEisBOND - Weight Preference Profiling (national FFF project)
 - 1999–2002 • A New Modular Architecture for Data Mining (national FWF project)
 - MetaL: A Meta-Learning Assistant for Providing User Support in Machine Learning and Data Mining (EC ESPRIT project)
 - 3DSearch: 3D Ontology-based Web Search Application (EC IST trial project)
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Scientific Activities

- Editor-in-Chief • *Data Mining and Knowledge Discovery* (since 2015)
- Action Editor • *Machine Learning* (since 2003)
- *Data Mining and Knowledge Discovery* (2009–2014)
- Associate Editor • AI Access books (2013–)
- Editorial Board • *Machine Learning* (2001–)
- *Journal of Artificial Intelligence Research* (2005–2008)
- *Data Mining and Knowledge Discovery* (2007–)
- *Applied Artificial Intelligence* (2004–)
- *Journal of Interesting Negative Results in Natural Language Processing and Machine Learning* (2008)
- *International Journal of Intelligent Games & Simulation* (2002–2005)
- Program Chair • 16th International Conference on Discovery Science, Singapore, 2013
- 27th International Conference on Machine Learning, Haifa, 2010
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, Berlin, 2006
- Fachgruppentreffen Maschinelles Lernen, Saarbrücken, 2005
- Other Activities • Co-chair of Rule Learning Track, RuleML 2015
- Workshop Co-chair, SIG-KDD 2015
- Member of the Awards Committee ECML/PKDD 2014
- Awards Chair ECML/PKDD 2012
- Member of the ICML Advisory Committee
- Proposals Co-Chair of the ECML/PKDD Steering Committee (2008–2011)
- Member of the Steering Committee of the ECML/PKDD conference series (2006–2009)
- Member of the IEEE CIS Task Force on Machine Learning
- Tutorial Chair DS-05
- Workshop and Tutorial Chair ICML 2004
- Tutorial Co-chair ECML/PKDD 2002
- Workshop Co-chair ECML/PKDD 2001

Scientific Activities (continued)

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| Organization | <ul style="list-style-type: none"> • RuleML-14 Tutorial on “Rule Learning” • Dagstuhl Workshop on “Preference Learning” (with E. Hüllermeier, C. Rudin, W. Kotlowski, S. Sanner), March 2014 • ECML/PKDD-13 Workshop on “Reinforcement Learning from Generalized Feedback: Beyond Numeric Rewards” (with E. Hüllermeier) • ECAI-12 Workshop on “Preference Learning: Problems and Applications in AI” (with E. Hüllermeier) • ECAI-12 Tutorial on “Preference Learning” (with E. Hüllermeier) • ECML/PKDD-10 Tutorial and Workshop on “Preference Learning” (with E. Hüllermeier) • ECML/PKDD-09 Workshop on “Preference Learning” (with E. Hüllermeier) • ECML/PKDD-09 Workshop on “From Local Patterns to Global Models” (with A. Knobbe) • ECML/PKDD-08 Workshop on “Preference Learning” (with E. Hüllermeier) • ECML/PKDD-08 Workshop on “From Local Patterns to Global Models” (with A. Knobbe) • Co-Chair of the “The 17th European Conference on Machine Learning and the 10th European Conference on Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD-06)” (with T. Scheffer and M. Spiliopoulou) • LWA-05 Workshop of the “GI Fachgruppe für Maschinelles Lernen (FGML-05)” (with G. Grieser) • GfKI-05 Session on “Multi-Label Classification, Ranking, and Preference Learning” (with E. Hüllermeier) • CGAIDE-04 Session on “Learning and Adaptation in Games” (with P. Spronck) • ECML/PKDD-04 Workshop “Advances in Inductive Rule Learning” • KI-03 Workshop “Preference Learning: Models, Methods, Applications” (with E. Hüllermeier) • ECML/PKDD-02 Workshop “Salon des refusés — When learning and mining methods misbehave” (with H. Bensusan, G. Giraud-Carrier, M. Sebag; WS was cancelled) • ICML-99 Workshop on “Machine Learning in Game Playing” (with M. Kubat) • ICML-96 Workshop on “Data Mining with Inductive Logic Programming” (with B. Pfahringer) |
| Senior PC | <ul style="list-style-type: none"> • Senior PC Member AAAI (12,13,15) • Senior PC Member KDD (10,15) • Area Chair (11) & Senior PC Member (13) IJCAI • Area Chair ICML (11,09,08,05,04) • Vice Chair ICDM (13,10,04) • Guest Editorial Board Journal Track ECML/PKDD (13) • Area Chair ECML/PKDD (15,13,11,09,08,07,05) • Area Chair PAKDD (08) • Area Chair ECAI (14,12,06) |
| PC Member | <ul style="list-style-type: none"> • IJCAI: Intl. Joint Conference on Artificial Intelligence (05,09–15) • AAAI: National Conference on Artificial Intelligence (06,07,12–15) • ECAI: European Conference on Artificial Intelligence (06–08,12–14) • KI: Annual German Conference on Artificial Intelligence (09,11–12,14) • ICML: International Conference on Machine Learning (99,02–15) |

Scientific Activities (continued)

- **NIPS**: Neural Information Processing Systems (12–14)
- **ECML/PKDD**: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery (01–09,11-15)
- **ECML**: European Conference on Machine Learning (98–00)
- **ACML**: Asian Conference on Machine Learning (09–10)
- **ICMLA**: International Conference on Machine Learning and Applications (04,05)
- **ILP**: International Conference on Inductive Logic Programming (02,05,11)
- **KDD**: ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (08-12,15)
- **PAKDD**: Pacific-Asia Conference on Knowledge Discovery and Data Mining (07–09)
- **SDM**: SIAM International Conference on Data Mining (04–08,10–12)
- **ICDM**: IEEE International Conference on Data Mining (04–11,13–14)
- **IDA**: International Symposium on Intelligent Data Analysis (09,11–15)
- **DS**: International Conference on Discovery Science (03–05,07–09,11–15)
- **BigData**: IEEE International Conference on Big Data (13–15)
- **DaWaK**: International Conference on Data Warehousing and Knowledge Discovery (06,07)
- **SIGIR**: International ACM SIGIR Conference (04–09)
- **ECIR**: European Conference on Information Retrieval (03,04,07-09)
- **KDIR**: International Conference on Knowledge Discovery and Information Retrieval (11)
- **ICPR**: International Conference on Pattern Recognition (14)
- **ICPRAM**: International Conference on Pattern Recognition Applications and Methods (12)
- **AISTATS**: International Conference on Artificial Intelligence and Statistics (14)
- **ASONAM**: International Conference on Advances in Social Networks Analysis and Mining (12,13)
- **ESWC**: Extended Semantic Web Conference (15)
- **RuleML**: International Web Rule Symposium (14,15)
- **INAP**: International Conference on Applications of Declarative Programming and Knowledge Management (11)
- **ICDE**: International Conference on Data Engineering (11)
- **CIKM**: ACM Conference on Information and Knowledge Management (08,11)
- **KEOD**: International Conference on Knowledge Engineering and Ontology Development (09-11)
- **IICAI**: Indian International Conference on Artificial Intelligence (09)
- **SBIA**: Brazilian Symposium on Artificial Intelligence (08)
- **CG**: International Conference on Computers and Games (13)
- **CGAIDE**: International Conference on Computer Games: Artificial Intelligence, Design and Education (04)
- **zfxCON**: Konferenz zur Computerspieleentwicklung (05)
- International Workshop on Knowledge Discovery and Data Mining Meets Linked Open Data (KnowLOD) – ESWC-15, ESWC-14, ESWC-13, ESWC-12
- ECML/PKDD-15 Workshop on Meta-Learning and Algorithm Selection (MetaSel) – ECML/PKDD-15, ECAI-14

Workshop PC

Scientific Activities (continued)

- Multidisciplinary Workshop on Advances in Preference Handling (MPREF) – IJCAI-15, AAAI-14, IJCAI-13
- ECML/PKDD-14 International Workshop on Multi-Target Prediction
- ECML/PKDD-14 1st International Workshop on Machine Learning for Urban Sensor Data (SenseML)
- ECML/PKDD-13 Workshop on Machine Learning and Data Mining for Sports Analytics
- ECML/PKDD-13 Workshop on Solving Complex Machine Learning Problems with Ensemble Methods
- ECML/PKDD-12 Workshop on Mining and Exploiting Interpretable Local Patterns (I-Pat)
- ECML/PKDD-12 Workshop on Learning from Unexpected Results (Silver)
- ECAI-12 Workshop on Planning to Learn (PlanLearn)
- ECML/PKDD-11 Workshop on Machine Learning and Data Mining in Games
- ICML-10 Workshop on Learning from Multi-Label Data
- KDD-10 Workshop on Useful Patterns
- ECML/PKDD-09 Workshop on Learning from Multi-Label Data
- NIPS-08 Workshop on Cost Sensitive Learning
- IJCAI-05 Workshop on Reasoning, Representation, and Learning in Computer Games
- ICML-05 Workshop on Learning with Multiple Views
- ICML-05 Workshop on ROC Analysis in Machine Learning
- ECML/PKDD-04 Workshop on Advances in Inductive Rule Learning
- ECAI-04 Workshop on ROC Analysis in AI
- KI-03 Workshop on Preference Learning
- ICML-99 Workshop on Machine Learning in Game Playing
- IJCAI-97 Workshop on Frontiers of Inductive Logic Programming
- ICML-96 Workshop on Data Mining with Inductive Logic Programming
- *Information Sciences*, Special Issue on “Discovery Science” (with E. Hüllermeier)
- *Machine Learning*, Special Issue on “Preference Learning and Ranking” (with E. Hüllermeier)
- *Data Mining and Knowledge Discovery*, Special Issue on “Global Modeling using Local Patterns” (with A. Knobbe)
- *Machine Learning*, Special Issue on “Machine Learning in Games” (with M. Bowling, T. Graepel, R. Musick)
- *Applied Artificial Intelligence*, Special Issue on “First-Order Knowledge Discovery in Databases” (with B. Pfahringer)

Guest Editor

Scientific Activities (continued)

Reviewer

- Journals: *ACM Journal of Data and Information Quality* (10), *ACM Transactions on Information Systems* (08), *Advances in Artificial Intelligence* (12), *AI Communications* (02,05,11), *Annals of Operations Research* (05), *Applied Artificial Intelligence* (94–12), *Applied Intelligence* (02,03), *Applied Intelligence Review* (09), *Artificial Intelligence in Medicine* (06), *Computer Journal* (11), *Computing and Systems* (03), *Cybernetics & Systems* (94–00, 11), *Data Mining and Knowledge Discovery* (98,04,06-13), *Fundamenta Informaticae* (08), *ICCA Journal* (97–99), *ICGA Journal* (09,14), *IEEE Intelligent Systems* (01), *IEEE Trans. on Computational Intelligence and AI in Games* (14) *IEEE Trans. on Knowledge and Data Engineering* (02,08,12), *IEEE Trans. on Neural Networks and Learning Systems* (05,09-11,13), *IEEE Trans. on Pattern Analysis and Machine Intelligence* (04,08,12,13), *IEEE Trans. on Robotics* (10), *IEEE Trans. on Systems, Man and Cybernetics* (04,05), *Informatika* (94), *Information Processing Letters* (95,13), *Information Sciences* (02,09), *International Journal of Advanced Robotic Systems* (12), *International Journal of Approximate Reasoning* (09), *International Journal of Applied Mathematics and Computer Science* (11), *International Journal of Pattern Recognition and Artificial Intelligence* (12,13), *Journal of Artificial Intelligence Research* (03,05–07,10,12,14), *Journal of Classification* (14), *Journal of Computer and System Sciences* (04), *Journal of Experimental & Theoretical Artificial Intelligence* (10), *Journal of Intelligent Information Systems* (01), *Journal of Machine Learning Research* (02–04,06,08,13,15), *Kuwait Journal of Science and Engineering* (07), *Knowledge and Information Systems* (07,09,10), *Machine Learning* (98–13), *Theoretical Computer Science* (99), *User Modeling and User-Adapted Interaction* (14)
- Funding Agencies: *German Research Foundation (DFG)* (07–14), *European Commission* (12,13), *U.S. National Science Foundation (NSF)* (09), *Swiss National Funds (SNF)* (08), *Swiss State Secretariat for Education and Research* (09), *Academy of Finland* (07), *Science Foundation Ireland* (06), *Israel Science Foundation (ISF)* (03,05), *Academy of Sciences of the Czech Republic* (04), *Netherlands Organisation for Scientific Research (NWO)* (05,06), *Flanders Research Foundation (FWO)* (11), *Hellenic Ministry of Education, Lifelong Learning and Religious Affairs (THALIS)* (10,11), *Portuguese Fundação para a Ciência e Tecnologia (FCT)* (11), *Microsoft Ph.D. Scholarship Program* (07),
- Publishers: *Morgan Kaufmann* (08), *Springer* (10), *Morgan & Claypool* (11)

Research Areas

- Inductive Rule Learning, Preference Learning and Ranking, Noise handling, Selective Sampling, Pairwise Classification, Inductive Logic Programming, Web Mining and Text Classification, Ensemble Methods and Meta-Learning, Machine Learning in Game Playing, Predictive Maintenance, Data Mining in the Social Sciences

Invited Talks at Scientific Meetings

22. 5. 2014

- “Preference-Based Multilabel Classification”, Featured talk at the 38th Annual Workshop of the Austrian Association for Pattern Recognition (ÖAGM)

13. 9. 2012

- “Preference Learning by Pairwise Comparisons”, Keynote at the Symposium *Lernen – Wissen – Adaptivität*, Dortmund

Scientific Activities (continued)

- 17. 12. 2011 • “Towards Preference-Based Reinforcement Learning”, NIPS 2011 Workshop on Choice Models and Preference Learning (cancelled)
 - 6. 10. 2011 • “Preference Learning”, Discovery Science 2011 conference (jointly with Eyke Hüllermeier)
 - 19. 5. 2008 • “Preference Learning”, BeneLearn 2008 conference
- Other Presentations and Invitations*
- 1. 10. 2014 • “Inverted Heuristics for Inductive Rule Learning”, Université Paris Sud
 - 10. 11. 2011 • “Preference Learning by Pairwise Decompositions”, University Heidelberg
 - 10. 5. 2010 • “Lernen durch Modellieren von Präferenzen”, Austrian Research Institute for Artificial Intelligence
 - 14. 5. 2008 • “Learning by Modeling Preferences”, Fraunhofer IGD Darmstadt
 - 15. 7. 2004 • “Knowledge Engineering und Lernen in Spielen”, Forschungszentrum für Begriffliche Wissensverarbeitung, Darmstadt
 - 17. 12. 2002 • “Separate-and-Conquer Rule Learning”, Otto-Guericke Universität Magdeburg
 - 26. 10. 2002 • Invitation to University of Bristol, 1 week of joint work with Peter Flach
 - 12. 6. 2002 • “Web Mining - Nutzung der Vernetzungsstruktur des World-Wide Webs”, TU Darmstadt
 - 25. 4. 2002 • “Problemspezifische Ensembles für Mehr-Klassen Probleme und Hypertext Klassifikation”, TU Berlin
 - 11. 2. 2002 • “Web Mining - Nutzung der Vernetzungsstruktur des World-Wide Webs”, Austrian Research Institute for Artificial Intelligence
 - 18. 1. 2001 • “Web Mining — Data Mining im Internet”, University of Rostock
 - Feb 1997 • Invitation to Katholieke Universiteit Leuven, Belgium, for 2 weeks (first-order knowledge discovery in chess endgame databases)
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Lectures

Courses Taught

- TUD
- TU Darmstadt, Germany
 - ▷ Introduction to General Computer Science 1 (WS0405,WS0607,WS0809)
 - ▷ Introduction to General Computer Science 2 (SS05,SS07,SS09,SS12,SS13)
 - ▷ Introduction to Artificial Intelligence (SS07,SS09,WS1011,WS1213,WS1314)
 - ▷ Introduction to Data and Knowledge Engineering (jointly with A. Buchmann; SS05–SS13)
 - ▷ Introduction to Machine Learning and Data Mining (jointly with G. Grieser; WS0304–WS0607)
 - ▷ Machine Learning: Symbolic Approaches (WS0809–WS1011,WS1213–WS1314)
 - ▷ Web Mining (SS04–SS06,SS08–SS13)
 - ▷ Serious Games (Lecture Series, SS13)
 - ▷ Seminar Machine Learning and Data Mining in Practice (jointly with B. Schiele and Th. Hofmann, WS0405)
 - ▷ Seminar on Machine Learning Research (WS0405–WS0607,WS0809–WS1314)
 - ▷ Seminar Knowledge Engineering and Learning in Games (SS04,SS06, SS10)
 - ▷ Seminar on Spam Mail Filtering (SS05)
 - ▷ Practical Course in Machine Learning and Data Mining (SS04–SS07,SS11,SS13)
 - ▷ Practical Course in Web Mining (SS12)
 - ▷ Extended Seminar on Knowledge Engineering for Question-Answering Systems (jointly with C. Biemann: SS13)
 - ▷ Computer Poker Challenge (SS08,SS09,SS10,SS11)
- MPI
- International Max Planck Research School for Demography, Rostock, Germany
 - ▷ Agent-Based Computational Demography (jointly with Francesco C. Billari; Jan 02)
- IMKAI
- University of Vienna (Dept. of Medical Cybernetics and Artificial Intelligence)
 - ▷ Web Mining — Data Mining im Internet (SS01,SS02)
 - ▷ Inductive Logic Programming (SS96,SS97,SS99)
 - ▷ Machine Learning (jointly with Gerhard Widmer; WS97)
- TU Wien
- Vienna University of Technology
 - ▷ Inductive Rule Learning (SS12)
 - ▷ Teaching Assistant for various undergraduate courses in Computer Science and Mathematics (1986–1991)

Lectures in Industrial Seminars

- Austrian Research Institute for Artificial Intelligence, Vienna
 - ▷ Data Mining (Mar 1997)
 - ▷ Learning Agents on the Web (Dec 1996)
 - ▷ Knowledge Discovery and Data Mining (Jan 1996)
 - ▷ Case-Based Reasoning (May 1993)

Scientific Talks

- Numerous presentations at major Artificial Intelligence (IJCAI, AAAI, ECAI), Machine Learning (ICML, ECML), and Data Mining (PKDD) conferences and workshops (see Publications)

Ph.D. Theses

- Supervisor
- five completed Ph.D. theses
 - ▷ Dennis Güttinger: *A New Metaheuristic Approach for Stabilizing the Solution Quality of Simulated Annealing and Applications*, 31.1.2013
 - ▷ Frederik Janssen: *Heuristic Rule Learning*, 10.10.2012

Lectures (continued)

- ▷ Eneldo Loza Mencia: *Efficient Pairwise Multilabel Classification*, 24.7.2012
 - ▷ Sang-Hyeun Park: *Efficient Decomposition-Based Multiclass and Multilabel Classification*, 25.5.2012
 - ▷ Heiko Paulheim: *Ontology-Based Application Integration on the User Interface Level*, 8.7.2011
 - Currently supervising 4 Ph.D. students.
 - co-referent • for 16 Ph.D. Theses
 - ▷ Andreas Faatz: *Ein Verfahren zur Anreicherung fachgebietsspezifischer Ontologien durch Begriffsvorschläge*, TU Darmstadt, 2004
 - ▷ Klaus Brinker: *Active Learning with Kernel Machines*, University of Paderborn, 2004
 - ▷ Klaus Varrentrapp: *A Practical Framework for Adaptive Metaheuristics*, TU Darmstadt, 2005
 - ▷ Tony Lindgren: *Methods of Solving Conflicts among Induced Rules*, Stockholm University, 2006
 - ▷ Tadeusz Pietraszek: *Alert Classification to Reduce False Positives in Intrusion Detection*, Albert-Ludwigs Universität Freiburg, 2006
 - ▷ Ulrich Rückert: *A Statistical Approach to Rule Learning*, TU München, 2008
 - ▷ Ingo Schwab: *Data Mining in kombinatorischen Spielen*, Friedrich Schiller-Universität Jena, 2008
 - ▷ Dietmar Lippold: *Begriffserwerb aus großen Mengen von Beispielen*, Universität Stuttgart, 2008
 - ▷ Stijn Vanderlooy: *Ranking and Reliable Classification*, University of Maastricht, 2009
 - ▷ Jens Hühn: *Induction and Fuzzification of Classification Rules*, Philipps-Universität Marburg, 2009
 - ▷ Jilles Vreekes: *Making Pattern Mining Useful*, Universiteit Utrecht, 2009
 - ▷ Patrick Edinger: *Modellierung und Techniken zur Optimierung von Multiagentensystemen in Zellularen Automaten*, TU Darmstadt, 2011
 - ▷ Weiwei Cheng: *Label Ranking with Probabilistic Models*, Philipps-Universität Marburg, 2012
 - ▷ Samuel Hiard: *Trimming the Complexity of Ranking by Pairwise Comparison*, Université de Liège, 2013
 - ▷ Borut Sluban: *Ensemble-based Noise and Outlier Detection*, Jožef Stefan International Postgraduate School, Ljubljana, 2014
 - ▷ Riad Akrouf: *Robust Preference Learning-based Reinforcement Learning*, Université Paris-Sud, 2014
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Academic Self-Administration

Deanship

- 2011–2013 • Dean of Studies, Faculty of Computer Science, TU Darmstadt
- 2011–2013 • Dean of Education, Faculty of Computer Science, TU Darmstadt

Committees

- 2011 – • Member of the Examination Board (Prüfungskommission, Chair – 2013)
- 2009 – • Member of the Faculty Council (Fachbereichsrat)
- 2005 – • Member of the Teaching and Study Committee (Lehr- und Studiausschuss)
- 2004 – • Member of Professoral Appointment Committees (Berufungskommissionen)
 - ▷ 4 Junior Professorships
 - ▷ 6 Full Professorships
 - ▷ Chair of one Appointment Committee

Public Recognition

Service Awards

- Outstanding Program Committee Member Award, AAAI-14
- Outstanding Editor Award, *Machine Learning*, 2005
- Named “Best Reviewer” at ECML/PKDD-01 and ECML/PKDD-03 conferences

Student Awards and Competition Results

- 2009 • *Carl Smith Award* for best student paper at *Discovery Science* conference
- 2009 • Student Team wins 3rd Place at *AAAI-10 Computer Poker Challenge*
- 2009 • Student Team wins 3rd Place at *IJCAI-09 Computer Poker Challenge*
- 2008 • Student Team wins 2nd Place at *AAAI-08 Computer Poker Challenge*
- 2007 • Student wins 3rd Place in *Data Mining Cup*, 2nd best university result
- 2006 • Student wins 5th Place in *Data Mining Cup*, 2nd best university result
- 2000 • Honorable mention for a one-liner entered in the *2nd International RoShamBo Competition*

Public Relations

- 25.01.2011 • TV-shooting of Man-Machine Poker competition (for Pro7 “Galileo”, but was never aired)
- 14.07.2005 • Interviewed by *Die Zeit* on Game Playing and Poker
- 21.10.2002 • Interview with *New Scientist* on the Deep Fritz — Kramnik chess match.
- 04.09.2001 • Participation in a press round-table at the ECML/PKDD-01, Freiburg. Several radio and press interviews on Machine Learning in Game Playing.
- 04.12.2000 • Dr. Dobb’s Journal article on “Mind Games” covers Henny (a one-liner that received honorable mention in the *2nd International RoShamBo Competition*)
- 13.08.1999 • Radio Interview (ORF Ö1) on Data Mining
- 17.05.1999 • Press release of FWF on project “Intelligent Data Analysis for Information Retrieval on the World-Wide Web”, copied by Austrian Press Agency and some magazines (e.g., *Format*)
- 06.05.1997 • Radio Live Interview (ORF Radio Wien) on Deep Blue’s win over Chess World-Champion Garry Kasparov
- Jan 1996 • Austrian Press Agency release on a Data Mining seminar at ÖFAI, carried by several national newspapers (e.g., *Standard*) and ORF teletext.
- Radio Interview (ORF Blue Danube Radio) on Data Mining