Peter Grünwald's Curriculum Vitae

(a much shorter version of this CV can be found at homepages.cwi.nl/~pdg/me.html)

Peter Daniel Grünwald was born May 13,1970, in Geldrop, the Netherlands. He has Austrian citizenship. He is married to Louise de Rooii. They live in Amsterdam, the Netherlands, with their daughter Wiske.

Affiliations

CWI (the National Research Institute for Mathematics and Computer Science in the Netherlands) P.O. Box 94079, 1090 GB Amsterdam, The Netherlands. Web: www.cwi.nl

Leiden University, Mathematical Institute P.O. Box 9512, 2300 RA Leiden, The Netherlands. Web: www.math.leidenuniv.nl

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Education

1994-1998	Ph. D. Student at CWI in Amsterdam
1988-1994	student at Free University of Amsterdam
1982-1988	Grammar School ('Gymnasium Beta') at the Lorentz Lyceum in Eindhoven

Academic Exams

1998	 Ph.D. degree in Mathematics/Computer Science at the University of Amsterdam Promotor (supervisor and responsible professor): Prof. Dr. Ir. P.M.B. Vitányi (CWI and University of Amsterdam)
	 Thesis awarded the 1999 FOLLI Prize
1994	'drs' (comparable to master's degree) cum laude in Computer Science at the Free
	University of Amsterdam. Specialization in Artificial Intelligence; minors in
	Theoretical Computer Science and Psychology
1991	'propaedeutic (preliminary) exam' in Mathematics
1989	'propaedeutic (preliminary) exam' in Computer Science

Professional Experience

From 1/11/08	Part-time Full Professor at Leiden University, Mathematical Institute (1 day/week)
From 1/4/05	Tenured researcher at CWI, Amsterdam.
	Leader information-theoretic learning team (part of PNA6 group).
2001-2008	Research fellow (1 day/2 weeks) at EURANDOM (European Institute for the
	Study of Stochastic Phenomena, Eindhoven, the Netherlands)
2001-2005	Researcher at CWI, in the group of H. Buhrman.
1999-2001	Postdoc Position at EURANDOM in the group of R. Gill

1998-1999	Postdoc Position at the Department of Computer Science, Stanford University,
	Stanford, USA, in the group of Y. Shoham; funded by an NWO TALENT Grant
1994-1998	Ph.D. student at CWI, supervised by P. Vitányi
1991-1993	Teaching assistant at the Free University of Amsterdam.
1989-1990	Board member of Amsterdam student organization SSRA

International Experience

1. Periods abroad:

2008	University of California at Berkeley (B. Yu (statistics) and P. Bartlett (computer science),1 month)
2003	Consulting to I.J. Myung and M.A. Pitt at Ohio State University, Columbus, Ohio (1 month)
2001	University of California at Santa Cruz (M. Warmuth (computer science) and D. Draper (statistics), 4 months)
1998-1999	Postdoctoral fellow, Stanford University (Y. Shoham, 1 year)
1997	University of Helsinki, Finland (CoSCo, H.Tirri, 2 months)
1993-1994	IRIT (Institut de Recherche en Informatique de Toulouse) / Université Paul Sabatier, France (M. Borillo, 6 months)
1994-now	Numerous shorter trips to universities in the USA and Europe; see under 'talks'

2. European Union Projects:

2008-now	steering committee member 7 th framework NoE <i>PASCAL-II</i>
2004-2008	steering committee member/workshop programme manager of EU 6 th Framework
	Network of Excellence PASCAL (Pattern Analysis, Statistical Learning and
	Computational Learning)

Awards, Honors, Grants

2010	Van Dantzig Prize (co-awarded to H. van Zanten). Highest Dutch prize in statistics and operations research, handed out once every five years to a researcher that is not yet 40.
2010	NWO (Netherlands Organization for Scientific Research) <i>VICI</i> -innovation grant <i>Safe Statistics</i> (EU 1300000)
2006	NWO Open Competition grant, project <i>The Skeptical MDL Principle</i> (EU 345000)
2005	Best paper award at BNAIC 2005 for the paper <i>Generalization to Unseen Cases</i> , coauthored with T. Roos, P. Myllymäki and H. Tirri
2004	NWO VIDI-innovation grant Learning when All Models Are Wrong (EU 600000)
2004	PASCAL EU Network Pump-Priming grant CWI/University of Helsinki (EU 63000)
2001	NWO travel grant for University of California at Santa Cruz, Applied Mathematics Department (DFL 16000)
2000	HSSS (Highly Structured Stochastic Systems) travel grant for two visits to Professor A.P. Dawid at University College, London (FF 10000)
1999	co-awarded FoLLI <i>Outstanding Dissertation Prize</i> for outstanding Ph.D. theses in Language, Logic and Computation (award currently known as <i>E.W. Beth Prize</i>)
1998	NWO TALENT-grant for 1-year visit to Stanford University (DFL 69000)

Both the 'propaedeutic' and the 'drs.' (master's) degree in Computer Science were obtained *cum laude*.

Media Appearance

2012	Quoted by <i>Groene Amsterdammer</i> (Dutch monthly magazine) who asked 'top of Dutch scientists' about future breakthroughs in their field, June
2011	Mentioned in NRC Handelsblad (major Dutch newspaper) on page 2 and in
	science pages, about probability of accidents at nuclear plants, June
2011	Participant in Live Debate (Boerhaave Debat) on Dutch Public Radio about the role of scientists in court, April 28th
2009	Interview about inaugural speech for Leiden professorship by <i>Hoe?Zo! Radio</i> , November 9th
2008	Helped the popular scientific magazine <i>Quest</i> to answer the question <i>How many</i> people have ever lived on earth? Main item of <i>Quest101</i> , November 2008, leading
	to news features in <i>Telegraaf</i> (major Dutch newspaper) and other Dutch and
	Belgian newspapers and interviews by several radio stations (3FM, 100%FM,
	Radio 1 Belgium)
2008	Interview about machine learning/statistics by Hoe?Zo! Radio, August 20
2007-2008	Interviewed twice on Dutch public television (<i>Een Vandaag</i> , March 27 th 2007, April
	2 nd 2008) about the flawed use of statistics in the trial against Lucia de B., a Dutch nurse convicted of seven murders.
2008	Interviewed about Lucia de B. for Finnish radio station, mentioned in Finland's
	main newspaper Helsingin Sanomat, July 11.
2006-2008	Regular appearance in Dutch media in context of Lucia de B. case, including, November 2 nd , 2007, front page and daily Fokke en Sukke Cartoon of <i>NRC</i>
	Handelsblad and page 2 of Volkskrant, two important Dutch newspapers. Several
	radio interviews on Nov. 2 nd 2007, including prime time interview on public Radio
	1. Several quotations in <i>Conviction by Numbers</i> , a news item in the January 19 th 2007 issue of <i>Nature</i> , about the case, and in September 2006 issue of the Dutch
	popular science magazine <i>Natuur en Techniek</i> . Interview in December 6 th 2006
	issue of <i>Vrij Nederland</i> , a Dutch weekly magazine.
	issue of the following a parent modely magaziner

Program Committee Memberships (Chairs/Senior PC Memberships are noted explicitly)

2012 2012	Twenty-Sixth Annual Conference on Computational Learning Theory (COLT '12) Theoretical Computer Science 2012 (TCS' 12)
2012	International Joint Conference on Artificial Intelligence (IJCAI), ``Senior PC
	member"
2010	Co-Program Chair of the Twenty-Sixth Annual Conference on Uncertainty in
	Artificial Intelligence (UAI '10)
2009	Twentieth International Conference on Algorithmic Learning Theory (ALT '09)
2009	Twenty-Fifth Annual Conference on Uncertainty in Artificial Intelligence (UAI '09), ``senior PC-member"
2008	Twenty-Fifth International Conference on Machine Learning (ICML 2008)
2008	"Learning with Prior Knowledge" satellite workshop at ICML 2008
2008	Eighteenth European Conference on Artificial Intelligence (ECAI 2008)
2007	Fifth International Symposium on Imprecise Probabilities and Their Applications (ISIPTA '07)
2007	Computation and Logic in the Real World (CiE '07)
2007	Twentieth Annual Conference on Computational Learning Theory (COLT '07)
2006	Twenty-First USA National Conference on Artificial Intelligence (AAAI '06)
2005	Fourth International Symposium on Imprecise Probabilities and Their Applications (ISIPTA '05)
2004	Tenth International Workshop on Artificial Intelligence and Statistics (AISTATS '05)

2004	PASCAL workshop Learning-theoretic and Bayesian Inductive Principles
2004	Twentieth Annual Conference on Uncertainty in Artificial Intelligence (UAI '04)
2004	Seventeenth Annual Conference on Computational Learning Theory (COLT '04)
2002	Fifteenth Annual Conference on Computational Learning Theory (COLT '02)
2001	Seventeenth Annual Conference on Uncertainty in Artificial Intelligence (UAI '01)

Organized Conferences & Workshops/Organization Chair

2011	General Chair of the Twenty-Seventh Sixth Annual Conference on Uncertainty in Artificial Intelligence (UAI '11)
2008	co-organizer EURANDOM workshop "10 years of EURANDOM", August 27-29, Eindhoven, the Netherlands
2008	co-organizer COLT/UAI satellite workshop "Recent Breakthroughs in MDL Learning", July 9, Helsinki, Finland
2006	Invited session organizer on <i>Information and Complexity</i> at IMS (Institute of Mathematical Statistics) 2006 Annual meeting. July 30-August 4, 2006, Rio de Janeiro, Brazil
2005	co-organizer of PASCAL/EURANDOM workshop <i>Modelling in classification and statistical learning</i> , (October 3-5, 2005, Eindhoven, the Netherlands)
2004	co-organizer of PASCAL/EURANDOM workshop <i>Notions of Complexity</i> (October 7-9, 2004, Eindhoven, the Netherlands)
2003	co-organizer of EURANDOM Workshop <i>Statistical Learning in classification and model selection</i> (January 15-18, Eindhoven, the Netherlands)
2001	co-organizer (chair) of the workshop <i>Minimum Description Length: recent developments in theory and applications</i> held at the annual NIPS (Neural Information Processing Systems) conference (Whistler, British Columbia, December 8, 2001)
2001	co-organizer (' local co-chair ') of the annual COLT conference (July 16-July 19, Amsterdam, the Netherlands)
1997	co-organizer Mini-Symposium on Model Selection, held as part of the annual SMP (Society of Mathematical Psychology) Conference, Bloomington, Indiana

Ph.D. Thesis Supervisorship

2006-2011	Wouter Koolen (co-supervision with Prof. Dr. P. Vitányi), <i>Combining Strategies Efficiently: High-Quality Decisions from Conflicting Advice</i> , successfully defended with <i>cum laude</i> distinction, January 2011, University of Amsterdam.
2006-2010	Tim van Erven, When data compression and statistics disagree: two frequentist challenges for the MDL Principle, successfully defended November 2010, Leiden University.
2006-2007	Rudi Cilibrasi (co-supervision with Prof. Dr. P. Vitányi), <i>Statistical Inference through Data Compression</i> , successfully defended February 23 rd , 2007, University of Amsterdam.
2004-2008	Steven de Rooij (co-supervision with Prof. Dr. P. Vitányi), <i>MDL Model Selection: Problems and Extensions</i> , successfully defended September 10th 2008, University of Amsterdam

Editing and Refereeing Activities

 Member 2008, 2009 and 2010 NWO committee for reviewing VENI innovation grant proposals

- Editor for special issue Information-Theoretic Methods for Bioinformatics of EURASIP Journal on Bioinformatics and Systems Biology, 2007
- ad-hoc reviewer for AFOSR, Annals of Statistics, Bayesian Analysis, Biometrika, Cardinal Innitzer Fund, Flemish Science Foundation, IEEE Transactions on Information Theory, IEEE Transactions on Signal Processing, Journal of Artificial Intelligence Research (JAIR), Journal of the Royal Statistical Society Series B, Theoretical Computer Science, International Statistical Review, Journal of Mathematical Psychology, Psychological Review, Machine Learning, Journal of Machine Learning Research (JMLR), Metrika, Mind, Review of Economic Studies, Springer-Verlag New York statistics books, Swiss Science Foundation, Management Science
- tenure track/promotion reviewer for several top universities in USA, UK and Australia
- ad-hoc reviewer for several conferences in computer science and information theory including substantial reviewing for NIPS (Neural Information Processing Systems) and ISIT (International Symposium on Information Theory) conferences.
- Program Committee member of several international conferences (see above)

Other Relevant Memberships/Activities

- Chairman of the Jury for the Annual VVS-OR Thesis Prize, the annual prize for the best master's thesis in statistics or operational research in the Netherlands (2011-now)
- Member Advisory Committee for the appointment of a Leiden professor of computer science (2010)
- Member DNA Advisory Committee of the Ministry of Justice for the to-be-created Dutch Register for Forensic Experts (since June 2009) ("DNA normstellende commissie van het Nederlands Register Gerechtelijk Deskundigen"). The task was to set formal requirements for experts testifying on DNA evidence in Dutch courts
- Actively involved in ultimately successful attempt by a number of scientists to reopen the court case against Lucia de B., see under "media"
- Currently involved as expert for the defense in another murder case
- Steering Committee Member PASCAL; see under 'international experience' (2004-now)
- PASCAL Conference and Workshop Programme manager; responsible for allocation of about EU 150000/year to various workshops (2004-2007)
- Ph.D. thesis reading committee member
 - 1. Thijs Westerveld (October 2004, University of Twente)
 - 2. Gabriel Infante-Lopez (April 2005, University of Amsterdam)
 - 3. Gilles van Vreeken (December 2009, University of Utrecht)
 - 4. Botond Cseke (January 2011, Radboud University Nijmegen)
- supervised master's thesis projects:
 - Sjaak Verbeek (1998), Volker Nannen (2003), Jeroen Groenenboom (2003), Jasper van Woudenberg (2005), Tim van Erven (2006), Wouter Koolen (2006), Thijs van Ommen (2011)
- 3-day course in project management, Boertien & Partners, April 2004

Teaching Experience

planned) Class on Statistical Learning, University of Leiden, Master Track Statistical Science for the Life and Behaviourial Sciences
Class on information-theoretic learning (6 ECTS), jointly with S. de Rooij, Jniversity of Leiden
HOVO (Higher Education for the Elderly) Class on <i>Use and Abuse of Statistics</i> , pintly with R. Gill and W. van Zwet, Leiden University
Class on information-theoretic learning (6 ECTS) and class on statistical learning heory (6 ECTS) as above
CWI summer course mathematics for high school teachers
et up a University of Amsterdam high school web class ('profielwerkstuk') jointly with T. van Erven (CWI) and Dr. M. van Someren (University of Amsterdam)
University of Amsterdam, class on information-theoretic methods in machine earning (10 ECTS points).
ecturer on Minimum Description Length methods at <i>Machine Learning Summer School</i> in Tübingen, Germany.
Iniversity of Amsterdam, teaching assistant for courses <i>Computational Learning</i> Theory and Kolmogorov Complexity given by Professor Paul Vitányi
Free University of Amsterdam, teaching assistant PROLOG, expert systems, reural networks
wo guest lectures each year (except '99, '02, '05, '07) in Paul Vitányi's class on Colmogorov complexity

Research Interests/Expertise

My research is about machine learning, theoretical statistics and reasoning under uncertainty. This research lies at the boundary between probability theory, statistics, information theory and computer science. I am committed to fruitfully combine insights from all these fields in my own work, as is reflected by my collaborations with top researchers from all these areas. My current research is mainly but not exclusively about:

- 1. *Model Misspecification in Statistics:* how to deal with the realistic situation in which all models under consideration are wrong, yet some are useful, with an emphasis on Bayesian approaches in nonparametric settings.
- 2. Learning the Learning Rate in Statistical Learning and On-Line Prediction: how to learn the optimal learning rate from data (e.g. the optimal Tsybakov exponent in classification problems, the optimal tuning parameter in Hedge). The goal is to get a unified treatment with model misspecification in statistics (the problems are more similar than they seem)
- 3. The role of statistics and probability theory in the law. I was actively involved in an ultimately successful attempt by several scientists to reopen the case against the alleged serial killer Lucia de B. and I am currently involved as expert for the defense in another court case.
- 4. *Minimum Description Length (MDL) Inference*, an information-theoretic approach to statistics and machine learning, based on the fundamental insight that the more one can compress a given set of data, the more one has learnt about the data. In 2007 I published the first comprehensive book on the topic. ACM Computing Reviews contains two (positive) reviews; there is also a (positive) review in the Journal of the American Statistical Association (*JASA*).

I also have expert knowledge on Model Selection, Bayesian Statistics, Foundations of Inductive Inference, Prediction of Sequences and Maximum Entropy Methods. I have some experience in Kolmogorov Complexity, Structural Risk Minimization, Coding Theory, Game Theory, Asymptotics in Statistics, Bayesian Networks, Statistics and the Law, Nonmonotonic Logic.

Languages

I was raised bilingually German-Dutch. I also speak English and French.

References

...are provided on request.

Lists of talks and refereed publications are provided in the appendices. Last updated: June 2012.

Appendix A: Talks

1. Invited Talks at Conferences, Large Workshops and other Major Professional Events

2012	(Planned) Workshop on Information Theory in Science and Engineering (WITMSE
	2012), August 27-29, Amsterdam, the Netherlands
2012 2012	(Planned) <i>Bayes Lectures</i> , August 29-30, University of Edinburgh, Edinburgh, UK Workshop on <i>Foundations for Ockham's Razor</i> , June 22-24, Carnegie-Mellon
2012	University, Pittsburgh, PA, USA
2011	Read Paper at the Ordinary Meeting at the Royal Statistical Society, London, UK, October 19
2010	Information Theory Workshop (ITW 2010), January 7, Cairo, Egypt
2009	Cowles Workshop on Simplicity and Likelihood, November 13, Yale University, New Haven, CT
2009	YES-III Workshop, October 3, EURANDOM, the Netherlands
2009	Model Selection Symposium, satellite workshop at Annual Meeting of Society for Mathematical Psychology, August 3, Amsterdam
2008	Annual ERNSI Workshop on System Identification, October 3, Sigtuna, Sweden
2008	Workshop to celebrate 10 Years of EURANDOM, August 27, Eindhoven, the
0000	Netherlands
2008	Annual Conferences on Learning Theory (COLT) and Uncertainty in Artificial Intelligence (UAI), July 9-12, Helsinki, Finland
2008	Information Theory Workshop (ITW 2008), invited session in honor of J.
2000	Rissanen's 75 th birthday, May 5-9, Porto, Portugal
2007	Oberwolfach Workshop on Reassessing the Paradigms of Statistical Model
	Building, October 21-25, Oberwolfach, Germany
2007	Entente Cordiale Workshop, University College London, May 21st, London, UK
2007	Belgian-Dutch Machine Learning conference (BeNeLearn), May 14-15, Amsterdam, the Netherlands
2007	Sixth Foundations of the Sciences Workshop (FOTSF '07), May 2-5, Amsterdam, the Netherlands
2007	Information Theory and Applications Workshop, January 29 – February 2, San Diego, CA
2006	Annual Meeting of the VVS Section on Social Sciences, November 17, Utrecht, the Netherlands.
2006	IMS (Institute of Mathematical Statistics) 2006 Annual meeting, July 30-August 4, 2006, Rio de Janeiro, Brazil
2006	Mathematical Foundations of Learning Theory-II, May 31-June 3, École Normale Supérieure, Paris, France
2006	Dagstuhl Seminar on <i>Kolmogorov Complexity and Applications</i> , January 29 - February 2, Schloss Dagstuhl, Germany
2005	PASCAL Workshop <i>Modelling in classification and statistical learning</i> , October 3-5, EURANDOM, Eindhoven, the Netherlands
2005	Graybill 2005 Conference on Statistics in Information Technology, June 2-3, Fort Collins, Colorado, USA
2004	Second Philips Symposium on Intelligent Algorithms, December 1-2, Eindhoven, the Netherlands
2004	PASCAL Workshop <i>Notions of Complexity</i> , October 7-9, EURANDOM, Eindhoven, the Netherlands
2004	Amsterdam Workshop on Model Selection, August 27-29, Amsterdam, the Netherlands
2004	Annual NVTI Dutch Theoretical Computer Science Day, March 3, Utrecht, the Netherlands
2003	Workshop <i>Paradigms of Model Building</i> , November 13-14, Dortmund, Germany

2003	DIMACS Workshop on Complexity and Inference, June 2-6, DIMACS Center,
	Rutgers University, NJ, USA
2002	Information Theory Workshop, October 20-25, Bangalore, India
2001	NIPS Workshop on Occam's Razor, December 8, Whistler, BC, Canada
2000	Conference on the Foundations of Statistical Inference, December 16-18,
	Shoresh, Israel
2000	Rank Prize Funds Mini-Symposium on Model Selection and Learning in Computer
	Vision, April, Windermere, UK
1999	32nd Annual Meeting of the Society for Mathematical Psychology, July 29-August
	1, Santa Cruz, California, USA

2. Invited Tutorials, Lecture Series, Panel Memberships and Talks for a general audience

2012	Workshop Beta en Recht (<i>The Sciences and the Law</i>), tutorial lecture on statistics for Dutch judges and public prosecutors, May, September, December, Utrecht,
2011	the Netherlands Over het bedrijven van Statistiek in Kans-loze Situaties, <i>Symposium Lessen uit de zaak Lucia de B. Provinciehuis Zwolle, the Netherlands, May 18</i> (audience: general public)
2011	Kansloze Situaties: van Willem Ruis tot Lucia de B. <i>Koninklijke Maatschappij voor Natuurkunde Diligentia, Den Haag, The Netherlands</i> , September 26
2011	Safe Testing, Farewell Symposium on the occasion of the retirement of Dr. A. de Vos, Free University, Amsterdam, The Netherlands, September 30
2011	Is bewijsrecht kans-loos? <i>Jaarlijks Symposium der Juridische Faculteitsvereniging Leiden JFV Grotius, Leiden</i> , The Netherlands, November (audience: law students)
2011	Your Honor, this was not a coincidence! About the use of Statistics in the case of Lucia de Berk. Jaarlijks <i>FMF Groninger Studenten Symposium</i> , Groningen, November 29 (audience: science students)
2010	Workshop Beta en Recht (see above), March, Amsterdam, the Netherlands, and November, Rotterdam, the Netherlands
2009	Annual "Open Day" for high-school students at the Leiden University Mathematical Instute, November 20, Leiden, the Netherlands
2009	Oratie (Inaugural Speech Leiden Professorship), Leiden University, November 6
2009	Leve de Wiskunde! Annual Congress for mathematics high school teachers, April 24, Amsterdam, the Netherlands
2008	panel member <i>TUMULT kenniscafé/debat</i> about the proper role of the scientist as expert witness in court, November 12 th , Utrecht, the Netherlands
2007	Advanced SIKS-course 'Computational Intelligence', April 16-17, Zeist, the Netherlands
2007	Evidence Seminar, University College London, March 20, London, UK (joint talk with philosopher Prof. Dr. T. Derksen on Lucia de B. case)
2006	Plenary talk at the reunion of former CWI employees, December 12, Amsterdam, the Netherlands
2005	Advanced <i>SIKS-course</i> 'Computational Intelligence', February 17-18, Zeist, the Netherlands
2004	Mathematics colloquium, University of Copenhagen, May 11, Copenhagen, Denmark
2004	Mathematics staff colloquium, Leiden university, March 24, Leiden University, the Netherlands
2004	Invited tutorial (introduction to MDL) at SNN (Neural Networks Foundation), Nijmegen University, April 8, Nijmegen, the Netherlands
2003	lecturer at Tübingen 2003 Machine Learning Summer School. August 4-16 2003, Tübingen, Germany

2003	Invited tutorial (introduction to MDL) at Ohio State University, June 17, Dortmund,
	Columbus, Ohio, USA
2003	Invited tutorial (introduction to MDL) at Universität Dortmund, June 22, Dortmund,
	Germany
2003	Invited tutorial (introduction to MDL) at the Université Paris-Sud, May 15, Paris,
	France
2002	Invited tutorial (introduction to MDL) at the Gatsby Institute, University College
	London, May 3, London, UK

3. Presentations of Refereed Papers at International Conferences

2011	Twenty-Fourth Conference on Learning Theory (COLT '11), July 9-11, Budapest,
	Hungary
2008	Twenty-Fourth Conference on Uncertainty in Artificial Intelligence (UAI'08), June
	9-12, Helsinki, Finland
2006	Eighth Valencia Meeting on Bayesian Statistics (VALENCIA 8), June 1-6,
	Benidorm, Spain
2002	Seventh Valencia Meeting on Bayesian Statistics (VALENCIA 7), June 2-6,
	Tenerife, Spain
2001	Fourteenth Annual Conference on Computational Learning Theory (COLT'01),
	July 16-19, Amsterdam, the Netherlands
2000	Sixteenth Annual Conference on Uncertainty in Artificial Intelligence (UAI '00),
	June 30-July 3, Stanford University, CA, USA
1999	The Twelfth Annual Conference on Computational Learning Theory (COLT '99),
	July 7-9, Santa Cruz, California, USA
1998	Fourth Symposium on Logical Formalizations of Common Sense Reasoning
	(Common Sense '98), January 6-8, London
1997	21st German Conference on Artificial Intelligence (KI '97), September 9-12,
	Freiburg, Germany.

4. Invited talks at various institutes; talks at small international workshops and local conferences

2012	Workshop on Logic and Learning Theory, Amsterdam; Eindhoven Stochastics Seminar; Statistics Seminar, Cambridge University, UK; Toyota Technological Institute, Chicago, IL, USA; Department of Statistics, Carnegie-Mellon University, Pittsburgh, PA, USA, EURANDOM Alumni Day, Eindhoven, the Netherlands
2011	NIPS Workshop on Relations between Machine Learning Problems, Granada, Spain; ISLA Colloquium, University of Amsterdam; AMI Spring Symposium, Technical University of Eindhoven; Seminarium für Statistik, University of Vienna,
2010	Seminarie Statistiek, University of Leuven, Belgium; Mathematics Colloquium, Delft University, the Netherlands; Algemeen Wiskunde Colloquim, University of Amsterdam, the Netherlands; Johann Bernoulli Colloquium, Groningen University, the Netherlands; <i>This Weeks Discoveries</i> , Leiden University, the Netherlands
2009	Statistics Colloquium, Yale University, New Haven CT
2008	Statistics Colloquium, University of California, Berkeley; Computer Science Colloquium, University of California, Berkeley
2007	Informatics Colloquium, Philips Research, Eindhoven, the Netherlands; Psychology Colloquium, University of California, Irvine
2006	Statistics Colloquium, University of Antwerp, Belgium; Statistics Colloquium, Eidgenössische Technische Hochschule (ETH) Zürich, Switzerland (2x); Colloquium at University of Amsterdam, the Netherlands (2x); Workshop for

chapter authors of the Handbook of the Philosophy of Information, Amsterdam, the Netherlands 2005 NIPS 2005 Workshop on Value of Information, Whistler, BC, Canada; Weekly SNN seminar, Nijmegen, the Netherlands; 2005 Belgium-Netherlands Conference on Artificial Intelligence (BNAIC-05), Bruxelles, Belgium; EURANDOM Alumni Day, EURANDOM, Eindhoven, the Netherlands; Department of Computer Science, Cornell University, Ithaca, NY, USA Monthly Colloquium on Intelligent Systems, University of Amsterdam, the 2004 Netherlands: Mathematical Statistics and Probability Seminar, University of Copenhagen, Denmark; Probability and Statistics Seminar, Utrecht University, the Netherlands; Statistics Colloquium, Leiden University, the Netherlands; Weekly SNN Seminar, Nijmegen, the Netherlands 2003 Workshop on Statistical Learning in Classification and Model Selection, EURANDOM, Eindhoven, the Netherlands; Department of Computer Science, Cornell University, Ithaca, NY, USA: Centre for Automated Learning and Discovery, Carnegie-Mellon University, Pittsburgh, PA, USA; 2003 Belgium-Netherlands Conference on Artificial Intelligence (BNAIC-03), Nilmegen, the Netherlands; Spatial Stochastics Seminar, CWI, the Netherlands Probability and Statistics seminar. Technical University of Delft, the Netherlands. 2002 Neurocolt Workshop on Generalization Bounds < 0.5, Cumberland Lodge, Windsor, UK. Workshop on Statistical Learning Theory, EURANDOM, Eindhoven, the Netherlands; Spatial Statistics Seminar, CWI Amsterdam, the Netherlands EURANDOM, Eindhoven, the Netherlands; Statistics seminar, Free University of 2001 Amsterdam, the Netherlands; Stochastics Colloquium, Utrecht University, the Netherlands: University of California at Berkeley, Department of Statistics. Berkeley, CA, USA; University of Illinois at Urbana-Champaign, Department of Computer Science (2 talks), Urbana-Champaign, IL, USA; University of California at Santa Cruz, Department of Computer Science and Engineering, Santa Cruz, CA, USA; University of California at Santa Cruz, Department of Applied Mathematics and Statistics, Santa Cruz, CA, USA; Stanford University, Department of Computer Science, Stanford, CA, USA; NIPS Workshop on Minimum Description Length, Whistler, BC, Canada EURANDOM, Eindhoven, the Netherlands; University College London. 2000 Department of Statistics, London, United Kingdom; Harvard Medical College, Dept. of Biostatistics, Boston, MA, USA; Department of Statistics, Stanford University, CA, USA CSLI Machine Learning Seminar, Stanford University, Stanford, CA, USA; SNN 1999 (Neurale Networks Foundation), Nijmegen, the Netherlands; IBM Almaden Research Centre, San Jose, CA, USA; EURANDOM, Eindhoven, the Netherlands; University College London, London, United Kingdom; Eighth CSLI Workshop on Logic, Language and Computation, Stanford University, Stanford, California, USA; SRI International, Menlo Park, CA, USA; Berkeley Statistics Seminar, Dept. of Statistics, University of California at Berkeley, USA; Indiana University, Bloomington, Indiana, USA; Dept. of Computer Science, University of California at Santa Cruz, Santa Cruz; Berkeley Al Seminar, Dept. of Computer Science, University of California at Berkeley, USA; Nobots colloquium, Stanford University, USA; EURANDOM Postdoc Seminar, EURANDOM, Eindhoven, The Netherlands Dagstuhl Meeting on Theory and Praxis of Machine Learning, Schloss Dagstuhl, 1997 Germany: Dutch-German Workshop on Nonmonotonic Reasoning, Saarbrücken, Germany: Seventh Dutch-Belgian Conference on Machine Learning (BENELEARN '97), Tilburg, the Netherlands; Conference on Methods for Model Selection, Bloomington, Indiana, USA; Tilburg University, Dept. of Linguistics, Tilburg, the Netherlands; IJCAI Workshop on Abduction and Induction in AI,

	Nagoya, Japan; NRAC '97 (Second IJCAI Workshop on Nonmonotonic Reasoning, Action and Change), Nagoya, Japan, 1997
1996	NeuroCOLT Second Yearly Meeting, Villard de Lans, France; IPA Research
	School, Veldhoven, the Netherlands; University of Helsinki, Dept. of Computer Science, Helsinki, Finland; TARK-VI (Theoretical Aspects of Rationality and
	Knowledge) Conference (talk given in rump session), Zeeland, the Netherlands;
	NATO Summer School on Learning in Graphical Models, Erice, Sicily, Italy
	(poster); Eighth Annual Dutch Conference on Artificial Intelligence (NAIC-96), Utrecht, the Netherlands
1995	Accolade 95, Amsterdam, the Netherlands; Seventh Annual Dutch Conference on Artificial Intelligence (NAIC-95), Rotterdam, the Netherlands.
1994	Université Paul Sabatier, IRIT, Toulouse, France; CWI, Amsterdam the Netherlands; Fourth Belgian-Dutch Conference on Machine Learning (BENELEARN-94); Rotterdam, the Netherlands
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Last updated: June 2012

Appendix B: List of Publications

Books

- 1. *The Minimum Description Length Principle*. P. Grünwald. 570 pages. MIT Press, June 2007.
- 2. Festschrift in Honor of Jorma Rissanen on the Occasion of his 75th Birthday (edited by P.Grünwald, P. Myllymäki, I. Tabus, M. Weinberger and B. Yu). Tampere University Press. 2008.
- 3. Advances in Minimum Description Length: Theory and Applications (edited by P.Grünwald, I.J. Myung, M. Pitt). MIT Press, April 2005.

Journal Publications

- 4. T. van Erven and P.D. Grünwald and S. de Rooij. Catching Up Faster by Switching Sooner: A Predictive Approach to Adaptive Estimation with an application to the AIC-BIC Dilemma. *Journal of the Royal Statistical Society, Series B* 74(3), pages 361-397 (with discussion, pages 397-417), 2012
- 5. P.D. Grünwald and J.Y. Halpern. Making Decisions Using Sets of Probabilities: Updating, Time Consistency, and Calibration. *Journal of Artificial Intelligence Research (JAIR)* 42, pages 393-426, 2011
- 6. S. K. Bar-Lev, D. Bshouty, P.D. Grünwald and P. Harremoës. Jeffreys vs. Shtarkov Distributions Associated with Some Natural Exponential Families, *Statistical Methodology 7(6)*, pages 638–643, 2010
- 7. P.D. Grünwald and D. Navarro. NML, Bayes and true distributions: A comment on Karabatsos and Walker (2006). *Journal of Mathematical Psychology* 53, pages 43-51, 2009
- 8. P. Grünwald. Entropy Concentration and the Empirical Coding Game. *Statistica Neerlandica 62(3)*, pages 374-392, 2008. Special Issue: Eurandom 1998-2008: A random tour through a decade of research.
- 9. R. Gill and P. Grünwald. A Geometric and an Algorithmic Characterization of Coarsening at Random. *Annals of Statistics* 36(5), pages 2409-2422, 2008.
- P. Grünwald and J. Langford. Suboptimality of Bayes and MDL in classification under misspecification. *Machine Learning* 66(2-3), pages 119-149, 2007.
- 11. E.J. Wagenmakers and P. Grünwald. A model selection perspective on statistical inference: a Comment on Killeen (2005). *Psychological Science* 17(7), pages 641-642, 2006.
- 12. E.J. Wagenmakers, P. Grünwald and M. Steyvers. Accumulative prediction error and the selection of time series models. *Journal of Mathematical Psychology* 50(2), pages 149-166, 2006.
- 13. S. de Rooij and P. Grünwald. An Empirical Study of MDL Model Selection with Infinite Parametric Complexity. *Journal of Mathematical Psychology* 50(2), pages 180-192, 2006.
- 14. W. van Dam, R. Gill and P. Grünwald. The statistical strength of nonlocality proofs. *IEEE Transactions on Information Theory* 51(8), pages 2812-2835, 2005.
- 15. T. Roos, H. Wettig, P. Grünwald, P. Myllymäki and H. Tirri. On discriminative Bayesian network classifiers and logistic regression. *Machine Learning* 59(3), pages 267 296, 2005.
- 16. P. Grünwald and A.P. Dawid. Game theory, maximum entropy, minimum discrepancy, and robust Bayesian decision theory, *Annals of Statistics* 32 (4), pages 1367-1433, 2004
- 17. P. Grünwald and J. Halpern. Updating probabilities. *Journal of Artificial Intelligence Research (JAIR)* 19, pages 243-278, 2003
- 18. P. Grünwald and P. Vitányi. Kolmogorov complexity and information theory, with an interpretation in terms of questions and answers. *Journal of Logic, Language and Information* 12, pages 497-529, 2003

- 19. P. Grünwald. Model selection based on minimum description length, *Journal of Mathematical Psychology* 44, pages 133-152, 2001.
- 20. P.Kontkanen, P. Myllymäki, T. Silander, H.Tirri, and P. Grünwald. Predictive distributions and Bayesian networks, *Journal of Statistics and Computing* 10, pages 39-54, 2000

Refereed Conference Publications

- 21. T. van Erven, P.D. Grünwald , W. Koolen and S. de Rooij. Adaptive Hedge. *Advances in Neural Information Processing Systems 24 (NIPS 2011)*, Granada, Spain, 2011.
- 22. P.D. Grünwald. Safe Learning: bridging the gap between Bayes, MDL and statistical learning theory via empirical convexity. *Proceedings 24th Conference on Learning Theory (COLT 2011)*, Budapest, 2011.
- 23. W. Kotlowski and P.D. Grünwald. Maximum Likelihood vs. Sequential Normalized Maximum Likelihood in On-line Density Estimation. *Proceedings 24th Conference on Learning Theory (COLT 2011)*, Budapest, 2011
- 24. P.D. Grünwald and W. Kotlowski Prequential Plug-In Codes that Achieve Optimal Redundancy Rates even if the Model is Wrong . *Proceedings of the 2010 International Symposium on Information Theory (ISIT 2010)*, Houston, Texas, 2010.
- 25. W. Kotlowski, P.D. Grünwald and S. de Rooij. Following the Flattened Leader. *Proceedings 23rd Conference on Learning Theory (COLT 2010)*, Haifa, 2010.
- 26. P.D. Grünwald and P. Harremoës. Finiteness of Redundancy, Regret, Shtarkov Sums, and Jeffreys Integrals in Exponential Families. *Proceedings of the 2009 IEEE International Symposium on Information Theory (ISIT 2009)*, June 2009.
- 27. P.D. Grünwald and J. Halpern. A Game-Theoretic Analysis of Updating Sets of Probabilities. *Proceedings of the Twenty-Fourth Annual Conference on Uncertainty in Artificial Intelligence (UAI 2008)*, Helsinki, Finland, July 2008
- 28. T. van Erven and P. Grünwald and S. de Rooij. Catching up Faster in Bayesian Model Selection and Model Averaging. *Advances in Neural Information Processing Systems 20 (NIPS 2007)*. MIT Press, Cambridge, MA. February 2008.
- 29. T. Roos, P. Grünwald, P. Myllymäki and H.Tirri. Generalization to unseen cases. *Advances in Neural Information Processing 18 (Proceedings NIPS 2005),* pages 1129-1136. MIT Press, Cambridge, MA. February 2006.
- 30. S. de Rooij and P. Grünwald. MDL model selection using the ML Plug-in code. *Proceedings of the 2005 IEEE International Symposium on Information Theory (ISIT 2005)*. September 2005.
- 31. P. Grünwald and S. de Rooij. Asymptotic log-loss of prequential maximum likelihood Codes. *Proceedings of the Eighteenth Annual Conference on Learning Theory (COLT 2005)*, pages 652-667, June 2005.
- 32. P. Grünwald and J. Halpern. When ignorance is bliss. In *Proceedings of the Twentieth Annual Conference on Uncertainty in Artificial Intelligence (UAI 2004)*, Banff, Canada, July 2004
- 33. P. Grünwald and J. Langford. Suboptimal behaviour of Bayes and MDL in classification under misspecification. In *Proceedings of the Seventeenth Annual Conference on Computational Learning Theory (COLT 2004)*, Banff, Canada, July 2004
- 34. H. Wettig, P. Grünwald, T. Roos, P. Myllymäki and H.Tirri. When discriminative learning of Bayesian network parameters is easy. In *Proceedings of the Eighteenth International Joint Conference on Artificial Intelligence (IJCAI 2003)*, pages 491-496, Acapulco, Mexico, August 2003
- 35. P. Grünwald and J. Halpern. Updating probabilities. In *Proceedings of the Eighteenth Annual Conference on Uncertainty in Artificial Intelligence (UAI 2002)*, pages 187-196, University of Alberta, Edmonton, Canada, August 2002
- 36. P. Grünwald. Strong entropy concentration, game theory and algorithmic randomness. In *Proceedings of the Fourteenth Annual Conference on Computational Learning Theory* (COLT 2001), pages 320-336. Amsterdam, The Netherlands. Copyright © 2001 Springer Verlag, July 2001

- 37. P. Grünwald. Maximum entropy and the glasses you are looking through. In *Proceedings* of the Sixteenth Annual Conference on Uncertainty in Artificial Intelligence (UAI 2000), pages 238-246, Stanford, CA, USA, July 2000
- 38. P. Grünwald. Viewing all models as 'probabilistic'. In *Proceedings of the Twelfth Annual Conference on Computational Learning Theory (COLT' 99)*, pages 171-182. Santa Cruz, CA, USA, July 1999
- 39. P. Grünwald, P.Kontkanen, P. Myllymäki, T. Silander and H.Tirri. Minimum encoding approaches for predictive modeling. In *Proceedings of the 14th International Conference on Uncertainty in Artificial Intelligence (UAI '98)*, pages 183-192. Madison, WI, USA, July 1998
- 40. P.Kontkanen, P. Myllymäki, T. Silander, H.Tirri, and P. Grünwald. Bayesian and information-theoretic priors for Bayesian network parameters. In *Proceedings of the 10th European Conference on Machine Learning (ECML '98)*, pages 89-94. Lecture Notes in Artificial Intelligence vol. 1398, Springer-Verlag, Berlin, Germany, April 1998
- 41. P. Grünwald. Causation and nonmonotonic temporal reasoning. In KI-97: Advances in Artificial Intelligence (editors G. Brewka, C. Habel and B. Nebel), pages 159-170. Lecture Notes in Artificial Intelligence vol. 1303. Springer Verlag, Berlin, Germany, September 1997
- 42. P.Kontkanen, P. Myllymäki, T. Silander, H.Tirri, and P. Grünwald. Comparing predictive inference methods for discrete domains. In *Proceedings of the Sixth International Workshop on Artificial Intelligence and Statistics (AISTATS' 97)*, pages 311-318. Fort Lauderdale, Florida, USA, January 1997
- 43. M. Steyvers and P. Grünwald. A recurrent network that performs a context-sensitive prediction task. In *Proceedings Eighteenth Annual Conference of the Cognitive Science Society*, pages 335-339. Morgan Kauffman, June 1996

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- 44. S. de Rooij and P.D. Grünwald. Luckiness and Regret in Minimum Description Length Inference. *Handbook of the Philosophy of Science, Volume 7: Philosophy of Statistics* (edited by Prasanta S. Bandyopadhyay and Malcolm Forster), pages 865-900. Elsevier Science Publishers, 2011.
- 45. P. Grünwald. That Simple Device Already Used By Gauss. In *Festschrift in Honor of Jorma Rissanen on the Occasion of his 75th Birthday*, Tampere University Press, 2008.
- 46. P. Grünwald and P.M.B. Vitányi. Algorithmic Information Theory. In *Handbook of the Philosophy of Science, Volume 8: Philosophy of Information*. (edited by P. Adriaans and J. van Benthem), pp 289-325. Elsevier Science Publishers, 2008.
- 47. P. Grünwald. A first look at the minimum description length principle. Chapter 12 in Intelligent Algorithms in Ambient and Biomedical Computing (edited by W. Verhaegh, E. Aarts, and J. Korst), Philips Research Book Series, Vol. 7, pages 187-213. Springer-Verlag,2006
- 48. P. Grünwald. A tutorial introduction to the minimum description length principle. Chapters 1 and 2 in *Advances in Minimum Description Length: Theory and Applications* (editors P. Grünwald, I.J. Myung, M.A. Pitt), pages 1-76. MIT Press, April 2005
- P. Grünwald. Taking the sting out of subjective probability. In Words, Proofs and Diagrams (editors D. Barker-Plummer, D. Beaver, J. van Benthem and P. Scotto Di Luzio), pages 75-94. CSLI Publications, Stanford, CA, 2002
- 50. P. Grünwald. A minimum description length approach to grammar inference. In Symbolic, Connectionist and Statistical Approaches to Learning for Natural Language Processing (editors S. Wermter, E. Riloff, G. Scheler), pages 203-216. Lecture Notes in Artificial Intelligence vol. 1040. Springer Verlag, Berlin, Germany, 1996

Other

1. Thesis

51. P. Grünwald. *The Minimum Description Length Principle and Reasoning under Uncertainty*. Ph.D. thesis, University of Amsterdam, 1998, 300 pages. Available as ILLC Dissertation Series DS 1998-03

2. Invited Comments on Papers by Others/Book Reviews

- 52. P. Grünwald. Commentary on *The Optimality of Jeffreys Prior for Online Density Estimation and the Asymptotic Normality of Maximum Likelihood Estimators by F. Hedayati and P. Bartlett. Proceedings 25th Conference on Learning Theory (COLT 2012)*, JMLR Workshop and Conf. Proc. Vol. 23, 2012
- 53. P. Grünwald. Review of the book *Statistical and Inductive Inference by Minimum Message Length* by Chris Wallace, Springer 2005. *Computer Journal*, June 2006.

3. Invited Abstracts

54. P. Grünwald and A.P. Dawid. Game theory, maximum generalized entropy, minimum discrepancy, robust Bayes and Pythagoras. In *Proceedings 2002 Information Theory Workshop (ITW 2002)*, Bangalore, India, October 2002

4. Refereed Abstracts

- 55. P. Grünwald. Bayesian inconsistency under misspecification. Abstract for Plenary presentation at the *Eighth Valencia International Meeting on Bayesian Statistics*, Benidorm, Spain, June 2006.
- 56. P. Grünwald, P. Kontkanen, P. Myllymäki, T. Roos, H. Tirri and H. Wettig. Supervised posterior distributions. Presented at the *Seventh Valencia International Meeting on Bayesian Statistics*, Tenerife, Spain, June 2002
- 57. P. Kontkanen, P. Myllymaki, T. Silander, H. Tirri and P. Grünwald. On the small sample size behavior of Bayesian and information-theoretic approaches for predictive inference. Presented at the Sixth Valencia International Meeting on Bayesian Statistics, Alcossebre, Spain, June 1998
- 5. Publications in Dutch Magazines, at Workshops, Local Conferences and Local Summer Schools
 - 58. P. Grünwald. De zaak Lucia de B., of: het 1-Gevangene Probleem (in Dutch). *Bi-logical* 1(2), pages 13-17. Part 1 (December 2008) and 2 (March 2009).
 - 59. P. Grünwald. Kansloze Situaties: van Willem Ruis tot Lucia de B. (in Dutch) In *CWI Syllabus Zomercursus 2008*, August 2008.
 - 60. T. van Erven, S. de Rooij and P. Grünwald. Switching between predictors with an application in density estimation. In *Proceedings 2007 Symposium on Information Theory in the Benelux (WIC 2007)*, Enschede, The Netherlands, 2007.
 - 61. T. Roos, P. Grünwald, P. Myllymäki and H.Tirri. Generalization to unseen cases. In Proceedings 2005 Belgium-Netherlands Conference on Artificial Intelligence (BNAIC '03), Bruxelles, Belgium, 2005. Best Paper Award.
 - 62. P. Grünwald and J. Halpern. Updating probabilities. In *Proceedings 2003 Belgium-Netherlands Conference on Artificial Intelligence (BNAIC '03)*, Nijmegen, the Netherlands, 2003
 - 63. H. Wettig, P. Grünwald, T. Roos, P. Myllymäki and H.Tirri. Supervised learning of Bayesian network parameters made easy. In *Proceedings 2002 Belgium-Netherlands Conference on Machine Learning (BeNeLearn '02)*, Utrecht, the Netherlands, 2002
 - 64. P. Kontkanen, P. Myllymäki, T. Silander, H.Tirri, and P. Grünwald. On predictive distributions and Bayesian networks. In *Proceedings 1997 Belgium-Netherlands Conference on Machine Learning (BeNeLearn '97)*, Tilburg 1997

- 65. P. Grünwald. The minimum description length principle and non-deductive inference. In *Proceedings IJCAI Workshop on Abduction and Induction in AI* (editor P. Flach), Nagoya, Japan 1997
- 66. P. Grünwald. Nonmonotonic temporal reasoning as a search for explanations. In *Proceedings Second IJCAI Workshop on Nonmonotonic Reasoning, Action and Change (NRAC '97)*, Nagoya, Japan, 1997.
- 67. P. Grünwald. Causation, explanation and persistence. In *Proceedings 1997 Dutch-German Workshop on Nonmonotonic Reasoning*, pages149-158, Saarbrücken 1997.
- 68. P. Grünwald. Causal networks and nonmonotonic temporal reasoning. In *Proceedings* 1996 Dutch Conference on Artificial Intelligence (NAIC-96), pages 157-166, nominated for Best Paper Award, Utrecht 1996
- 69. P. Grünwald, B. Gaume and M. Bouajjani. A new causal theory of action. In *Proceedings* 1995 Dutch Conference on Artificial Intelligence (NAIC-95), Rotterdam 1995

Last Updated: June 2012