

Prof. Dr. Marcus Birkenkrahe (neé Speh)

Associate Professor of Computer and Data Science

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Employment

Positions at Lyon College

2023- Present	Associate Professor of Computer and Data Science, Lyon College, Batesville, AR, USA
2022 - 2023	Associate Professor of Data Science, Lyon College, Batesville, AR, USA
2021 - 2022	Visiting Associate Professor of Data Science, Lyon College, Batesville AR, USA

Prior Employment

2007 - 2023	Professor of Business Information Systems, Berlin School of Economics and Law, Berlin, Germany [on leave of absence July 31, 2021 - July 31, 2023]]
2007 - 2021	Affiliated Faculty, Berlin Professional School, Berlin, Germany
2008 - 2020	President's Commissioner for E-Learning, Berlin School of Economics and Law (HWR Berlin), Berlin, Germany
2017 - 2020	Scientific Head of the E-Learning Competence Centre, Berlin School of Economics and Law (HWR Berlin), Berlin, Germany
2006 - 2016	Senior executive coach, Rundstedt & Partner GmbH, Berlin, Germany
2004 - 2006	Partner, Change Partnership GmbH, Berlin, Germany
2005 - 2007	Lecturer, Berlin School of Economics, Berlin, Germany
2003 - 2004	Independent coach, consultant and speaker
2002	Visiting Professor of Knowledge Management, University of Auckland Business School, Department of Management Science and Information Systems, NZ
1999-2001	Knowledge Manager, Shell International Ltd., Shell Finance Services, London, UK
1998 - 1999	Senior Strategist, Shell International Ltd., Shell Services Int., London, UK
1997 - 1998	Senior Advisor in Corporate Information Technology, Shell Int. Ltd., London, UK
1995 - 1997	Director of Knowledge Management, Accenture, London, UK
1995	Specialist, Accenture, Centre for Professional Education, St. Charles, IL, USA
1994	Postdoctoral Fellow Research Associate at DESY Berlin, Germany
1990 - 1993	Research Associate, Institute for Theoretical Physics, Univ. of Hamburg, Germany

Research Grants Obtained

2024	Faculty Summer Research Grant (\$2,500): Research towards a book on "Literate Programming", to be published with CRC Press (Taylor & Francis), ca. 2025/26.
2016 - 2020	Project Co-Lead, German Federal Research Grant (ca. € 500,000.00): „Development of new modes of learning and teaching“ and “Development of an E-Learning Competence Centre” . In German: <i>Qualitätsoffensive Lehre an der HWR Berlin, Entwicklung neuer Lehr- und Lernformen und Entwicklung eines E-Learning Kompetenzzentrums</i> .
2012 - 2016	Project Co-Lead, German Federal Research Grant (ca. € 500,000.00): “Blended Learning”. In German: <i>Teilprojekt “Blended Learning” der 3. Säule Hochschulpakt/Qualitätsoffensive Lehre</i> .
2010 - 2013	Project Lead, German Federal Research Grant (€ 259,310.00): „Project and Knowledge Management for SMEs“. In German: <i>FHProfUnt (BMBF) Projekt “InterKomp KMU 2.0 – Internationales IT-gestütztes Projekt- und Wissensmanagement im multikulturellen Umfeld</i> .

2009 – 2012 Project Lead, European Social Fund (€ 1,483,694.00): “Skills and Knowledge Transfer Using New Media and Web 2.0 at University or on the Job”. In German: *ESF Projekt “E(r)lernen: Kompetenzvermittlung zum Einsatz neuer Medien und Web 2.0 in Studium und Beruf”*.

Education

Degrees

1994 Dr. rer. nat. (PhD), Physics, University of Hamburg, Germany
 1990 Diploma (Master), Physics, University of Hamburg, Germany
 1983 Abitur (High School Diploma), Gelehrtenschule des Johanneums, Hamburg, Germany

Further Education

2023 - Understanding Artificial Intelligence, Supervised learning in R: classification, Introduction to ChatGPT / DataCamp
 2022 - Understanding Machine Learning / DataCamp
 - Introduction to Statistics / DataCamp
 2021 - PH125.2x: Data Science: Visualization / HarvardX / edX.org
 - Exploratory Data Analysis in R / DataCamp
 - Intermediate R / Cloud Computing for Everyone / DataCamp
 2020 - PH125.1x: Data Science: R Basics / HarvardX / edX.org
 - Learning to Work with Emacs, offered by Eric Simard / Udemy
 - LFS101x: Introduction to Linux, offered by LinuxFoundationX / edX.org
 - Data Science for Everyone / DataCamp
 2019 Programming 101: An Introduction to Python for Educators, Raspberry Pi Foundation and National Centre for Computing Education / Futurelearn.org
 2019 Introduction to the Shell for Data Science / DataCamp
 2018 - MIND101x: Mind of the Universe–Robots in Society/Delft University of Technology/edX
 - Philosophy and the Sciences: Introduction to the Philosophy of Physical Sciences, University of Edinburgh / Coursera.org
 2018 Introduction to Python / DataCamp
 2017 Successful Online Teaching and Facilitation of Collaboration, Berlin Centre for Higher Education, Berlin, Germany
 2006 Certificate Psychodrama Leader and Gestalt Therapist, Institute for Humanistic-Systemic Therapy, Berlin, Germany
 1999 Certificate in Creative Group-work, Southbank University, London, UK
 1998 Certificate in Counselling, Southbank University, London, UK
 1996 Rogerian Counselling, Hendon College, London, UK

Editorial Positions

2020 - Present Associate Editor, International Journal of Data Science, Inderscience Enterprises Ltd., ISSN 2053-082X / 2053-0811
 2019 – Present Editorial board member, International Journal of Big Data Management, Inderscience Enterprises Ltd., ISSN 2631-8687 / 2631-8679
 2009 – 2021 Editorial board member, International Journal of Innovation in Education, Inderscience Enterprises Ltd., ISSN 1755-1528 / 1755-151X
 2008 – Present Editorial Board Member, International Journal of Learning and Change, Inderscience Enterprises Ltd., ISSN 1740-2883 (online) / 1740-2875 (print)
 1998 – 2001 Editorial Board of *Strategy and Scenario Planning* (Ark plc)
 1997 – 2004 Editorial Board of *Business Change and Re-Engineering* (John Wiley & Sons – until 1999) and *Knowledge Management* (Ark plc)
 1993 – 1994 Editor of the Lattice Gauge Theory and C++ Sections of the Free Software Library for High Energy Physics at SLAC, Stanford, CA, USA

Advisory and Board Positions

2025-Present	Member, International Advisory Board of the Berlin MBA, Berlin Professional School of HWR Berlin (Berlin School of Economics and Law), Berlin, Germany
2020-Present	Scientific Member, d-cube institute for data science, Berlin School of Economics and Law / HWR Berlin, Berlin, Germany
2019-Present	Member of the Board of Advisors, Catholic Polytechnic University, Los Angeles, USA
2016-2021	Board member (Treasurer), Diocesan Historical Society of Berlin & Brandenburg
2016-2019	Advisory Board of DiKuBiS ("Digital Cultural Transformation of Berlin Industry")
2015-2016	Scientific Adviser to "BlendIT" (Online Business Administration Study Program)
2014-2016	Advisory Board of "LudoLeist" (Application of Serious Games to Mgmt. Accounting)
2004 - 2005	Advisory Board of the European Knowledge Management Forum
2003 - 2004	Board member/co-founder of a Waldorf-Kindergarten, Berlin, Germany
2001 - 2004	Advisory Board, Integration of Complex Social Systems, London School of Economics and Law, London, UK
2000 - 2007	Adviser to the 5 th and 6 th Framework Programs of the European Union in the area of Information Society and Technology
2000 - 2001	Member of the Global Scenario Group, Chatham House Forum, London, UK
1998 - 2001	Associate of the Cognoscenti Institute (France)
1996 - 1998	Advisor to the Globewide Network Academy, Inc., TX, USA
1994 - 1995	Chairman of the Board of Directors of the Globewide Network Academy, Inc., TX, USA (executive director from 1993-1996)

Awards, Honors, and Fellowships

2013	International E-Learning Awards, Honourable Mention, The International E-Learning Association
2012	International E-Learning Awards, Honourable Mention, The International E-Learning Association
2011	Talent pool award WiWi Online, Germany
2002	'Best Paper in 2002' of the University of Auckland Business Review, by the Editorial Board, Auckland, NZ
1994	TRACS Fellowship for the Human Capital and Mobility Programme of the CEC, Edinburgh Parallel Computing Centre
1994	Awarded 'Best Educational Service' and 'Best Campus-Wide Information System' on the Web 1994, by the organising committee of the 1 st WWW conference (chair: Tim Berner-Lee and Robert Cailleau), Geneva, Switzerland
1985 - 1988	Fellow of the Friedrich-Ebert-Stiftung
1986	DAAD/IAESTE Fellowship for Technical University of Delft, Delft, Netherlands

Research Interests

- ➔ Teaching data science with literate programming methods, especially GNU Emacs and Org-mode
- ➔ Machine learning, especially transferring methods from theoretical physics to deep learning
- ➔ Applications of generative AI and large language models in education and software engineering

***Publications*¹**

[62] **Birkenkrahe, M.** (2025). Truth Matters: Generative AI as Muse or Tool in the Research Process. *In: International Journal of Electrical and Computer Engineering Research* 5(3), 7-14. URL: <https://doi.org/10.53375/ijecer.2025.472>

¹ Name changed from Speh to Birkenkrahe in 2000.

- [61] Del Gobbo, C., **Birkenkrahe, M.** (2025). Generative AI Tools in Higher Education: A Case Study of Student Usage At A Small Liberal Arts College. In: Proc. 19th Int. Technology, Education and Development Conf (INTED25), 3-4 March 2025, 315-324; URL: <https://doi.org/10.21125/inted.2025.0142>
- [60] Del Gobbo, C., **Birkenkrahe, M.**, Yonts, N., and Beal, W. (2024). Automated Assessments of Artefacts using Artificial Intelligence. In: Proc. 17th annual Int. Conf. of Education, Research and Innovation (ICERI2024), 11-13 November 2024, 1431-1439; URL: <https://doi.org/10.21125/iceri.2024.0426>
- [59] **Birkenkrahe, M.** (2024). The Role of AI Coding Assistants: Revisiting the Need for Literate Programming in Computer and Data Science Education. In: Proc. 18th Int. Technology, Education and Development Conf (INTED24), 4-6 March 2024, 127-132; URL: doi.org/10.21125/inted.2024.0071
- [58] **Birkenkrahe, M.** (2023). Teaching Data Science with Literate Programming Tools. In: *Digital* 2023, 3(3), 232-250; URL: doi.org/10.3390/digital3030015
- [57] Khan, A. and **Birkenkrahe, M.** (2022). Development of a Usability Testing Procedure for Process Mining Tools. In: *International Journal of Data Science* 7(2), 142-163. URL: doi.org/10.1504/IJDS.2022.126852 .
- [56] **Birkenkrahe, M.** (2022). Teaching Data Science in a Synchronous Online Introductory Course at a Business School – A Case Study. In: *Guralnick, D., Auer, M.E., Proce, A. (eds) Innovations in Learning and Technology for the Workplace and Higher Education. TLIC 2021. Lecture Notes in Networks and Systems*, vol 349. Springer, Cham. URL: doi.org/10.1504/IJDS.2022.126852
- [55] **Birkenkrahe, M.** (8 April 2020). The First Webinar [In German: Das erste Online-Seminar] In: *eLerner Blog der HWR Berlin*. Online: blog.hwr-berlin.de. ISSN 2365-0338.
- [54] **Birkenkrahe, M.** (27 March 2020). Preparing your first webinar [In German: Das erste Online-Seminar vorbereiten] In: *eLerner Blog der HWR Berlin*. Online: blog.hwr-berlin.de. ISSN 2365-0338.
- [53] Hollmann, T., Drasdo, K., Mey, S. and **Birkenkrahe, M.** (2020). Media didactics for teaching forensic medicine in an undergraduate program for higher law enforcement – e-learning units as an additional offer of knowledge transfer [In German: Mediendidaktik im Fach Rechtsmedizin des Bachelorstudienganges Gehobener Polizeivollzugsdienst der HWR Berlin – E-Learning-Einheiten als zusätzliches Angebot der Wissensvermittlung]. *Preprint HWR Berlin, May 2020*.
- [52] **Birkenkrahe, M.**, Gunnoltz, J. (2020). Students Model Start-Up Processes – An Embedded Approach to Entrepreneurship Education. In: *Digitalität@HWR. Erfahrungen mit Digitalisierung in Forschung und Lehre, HWR Berlin, eds. Egger de Campo, M. and Resch, O., pp. 95-125 (ISBN 978-3-8487-6484-6, Nomos Verlag)*.
- [51] **Birkenkrahe, M.** (2019). Theodor Fontane and Catholicism in the Novel "Count Petöfy". [In German: "Theodor Fontane und der Katholizismus am Beispiel des Romans "Graf Petöfy"] In: *Höhle, M. (Hrsg.). Wichmann - Jahrbuch des Diözesangeschichtsvereins Berlin. Heilbad Heiligenstadt: Verlag F.W. Cordier. (=Neue Folge 15, 58./59. Jahrgang 2018/2019). S. 221-237*.
- [50] **Birkenkrahe, M.**, Hingst, A., Mey, S. (2019). "Yes, I can": How Lecturers Can Be Inspired for Digital Transformation" [In German: "Ja, ich will" – Wie können Lehrende für die digitale Transformation begeistert werden?] In: *Teaching Trends 2018, Hrsg. Robra-Bissantz, S., Bott, O.J., Kleinfeld, N., Neu, K., Zickwolf, K., in: Digitale Medien in der Hochschullehre, Bd. 7, Waxmann-Verlag, S. 30-36*.
- [49] **Birkenkrahe, M.** (2019). Playpals On A Digital Fault Line Or Participants Missing In Action? – How The Use Of Instant Messenger Apps Changed The Dynamics In My Classroom. In: *Schönbohm, A. (Hrsg.). Digitalkultur. Facetten digitaler Transformation. Stahnsdorf, 2019, pp. 224-239*.
- [48] **Birkenkrahe, M.** (28 Nov 2018). How To Update a MOOC [In German: Wie aktualisiert man einen MOOC?] In: *eLerner Blog der HWR Berlin*. Online: hwr-berlin.de. ISSN 2365-0338.
- [47] **Birkenkrahe, M.** (2018). Bridges Across the Digital Abyss – How To Use Messenger-Apps to Improve Communication and Collaboration in Courses [In German: Brücken über den digitalen Abgrund? – Wie

man mit Messenger-Apps Kommunikation und Kollaboration in Kursen verbessern kann (aber nicht muss)]. In: E. Kraatz (Hrsg.) *Veränderungen der Kommunikationsformen und Wandel der Kommunikationskompetenzen als neue Herausforderungen für Studium und Lehre an den Fachhochschulen für den öffentlichen Dienst. Redebeiträge und Thesen des 29. Glienicker Gesprächs*, S. 85-109. Hamburg: Tredition, 2018. ISBN 978-3-7469-7845-1.

[46] **Birkenkrahe, M.** (2017). The Research Methods Online Pre-Course [In German: Der Research Methods-Online Kurs]. In: *Blended Learning als zukunftsweisender und integraler Bestandteil des Polizeistudiums, Fachtagung E-Learning, HWR Berlin, 21-22 September 2017*.

[45] Lefers, B., **Birkenkrahe, M.** (2017). How Does Gamification Add Value To Teaching? Reflection rather than Regression. [In German: Was ist der didaktische Mehrwert von Gamification? Reflexion statt Regression]. In: *Spielräume – Facetten von Gamification in Unternehmen und Weiterbildung (Edition EMF)*; Hrsg. Schönbohm, Flying Kiwi Media, S. 189-206.

[44] Lefers, B., **Birkenkrahe, M.** (2016). How can educators with limited resources gamify their classes? A Design-based approach. In: *Proceedings of the 10th European Conference on Game Based Learning, Paisley 6-7 October 2016*.

[43] **Birkenkrahe, M.** (2015). Building Graduate-Level, Gamified xMOOCs In Moodle. In: *Proceedings of EADTU – The Online, Open and Flexible Higher Education Conference, Hagen 29-30 October 2015*, pp. 57-73. ISBN/EAN 978-90-79730-17-9.

[42] **Birkenkrahe, M.**, Kjellin, H. (2015). Improving Student Interaction and Engagement In The Flipped Classroom. In: *Proceedings of the 14th European Conference on e-Learning ECEL-2015 Hatfield, UK*, eds. Jefferies, A. and Cubric, M. University of Hertfordshire, Hatfield, UK, 29-30 October 2015, pp. 73-79. ISBN: 978-1-910810-70-5.

[41] **Birkenkrahe, M.** (2014). Using Storytelling Methods To Improve Emotion, Motivation and Attitude Of Students Writing Scientific Papers And Theses. In: *Proceedings of the 13th IEEE Int. Conf. on Cognitive Informatics & Cognitive Computing, London, August 18-20, 2014*.

[40] **Birkenkrahe, M.**, Erenli, K. (2014). QuizeRo – Recipe for a Successful QR-Code Scavenger Hunt. In: *Games for Training, Education, Health and Sports*, eds. Göbel, S. and Wiemeyer, J., *Lecture Notes in Computer Science* vol. 8395-2014, Heidelberg: Springer, pp. 190-194; *Proceedings of the 4th Int. Conf. on Serious Games, Darmstadt April 1-5, 2014*.

[39] Gunnoltz, J. and **Birkenkrahe, M.** (2013). Bit-wise learning: a didactical–methodological design and evaluation concept for a mobile learning pilot project in junior enterprises. In: *Int. J. Innovation in Education, Vol. 2, No. 1, 2013*.

[38] Gunnoltz, J., Quade, S., Habermann F. and **Birkenkrahe, M.** (2013). Free Tools for Project Management: An Organizational Learning Approach for Small and Medium-Sized Enterprises. In: *International Journal of Emerging Technologies in Learning (IJET) Vol. 8, No. 2. DOI: 10.3991/ijet.v8i2.2485*.

[37] **Birkenkrahe, M.**, Patel, S., Quade, S. (2013). Innovative Uses of Collaborative Platforms and Social Media Tools. In: *Int. J. of Knowledge, Innovation and the Enterprise, Vol. 1, No. 1-2, pp. 143-165*.

[36] **Birkenkrahe, M.** (2013). Learning by Playing With Identity in Virtual Classrooms [In German: Mit Identität spielen(d) lernen? — „Freiheit, Gleichheit, Brüderlichkeit“ im virtuellen Klassenzimmer]. In: *Tagungsband “Exzellenz Pakt Lehre” der 13. Jahrestagung des Arbeitskreises Evaluation und Qualitätssicherung der Berliner und Brandenburger Hochschulen, 24.-25.05.2012, Umweltforum Berlin*, Hrsg. Pohlentz, P. und Oppermann, A.; Bielefeld: Universitätsverlag Webler.

[35] **Birkenkrahe, M.**, Habermann, F., Quade, S. (2012). Manage Projects Smarter: Picking Tools for Small and Medium-Sized Enterprises. In: *Proc. International Conference on E-Learning in the Workplace, New York, 13-15.06.2012*.

[34] Schild, D., Trofimov V. **Birkenkrahe, M.** (2012). University 2.0. In: *Proceedings of the International Conference E-Learning 2012, Lisbon July 17-20*, eds. Nunes, M.B. and M McPherson, M., pp. 505-508.

- [33] **Speh**, M., Kearney, L. (2011). Buzz and beyond. In: Poets & Writers Magazine Vol. 39 No.5, pp. 11-12.
- [32] **Birkenkrahe**, M., Kjellin, H., Quade, S. (2011). Applying a formalized context to inspire people to develop transferable descriptions of knowledge. In: *Proceedings of the 5th GUIDE International Conference, Italy, Rome, Nov. 2011*.
- [31] **Birkenkrahe**, M., Habermann, F., Quade, S. (2011). Improving Collaborative Learning and Global Project Management in Small and Medium Enterprises. In: *Proceedings of ICELW 2011 – International Conference on E-Learning in the Workplace, New York, June 2011; best recommended paper for publishing in the "International Journal of Advanced Corporate Learning (ijAC)", Vol. 4, No. 4 (2011)*.
- [30] **Birkenkrahe**, M., Habermann, F., Quade, S. (2011). Ubiquitous Project Management Using Interactive Virtual 3D Worlds. In: *Proceedings of the 4th Conference on e-Learning Excellence in the Middle East 2011, UAE, Dubai, January 2011, pp. 450-466*.
- [29] **Birkenkrahe**, M., Gallo, A. (2011). Transfer Of Physical Classroom Techniques To The Virtual Classroom During a Practice Supervision Course. In: *Journal of Virtual Studies March 2011*.
- [28] **Birkenkrahe**, M., Schild, D. (2011). Transferring teaching techniques from the classroom to a virtual classroom using the example of a supervision course [In Russian: Перенос техник преподавания из аудитории в виртуальный класс на примере курса practice supervision]. In: *Information Technology in Business, Management and Education Bd. 2, FINEC, St Petersburg*.
- [27] **Birkenkrahe**, M. (2010). Interactive Teaching in Virtual Space [In German: Interaktive Lehre im Virtuellen Raum]. In: *Die gute Hochschule, Hrsg. Meyer, S., Pfeiffer, B., Berlin: Nomos Verlagsgesellschaft, pp. 219-232*.
- [26] **Birkenkrahe**, M., Mundt, M. (2009). From crisis to creativity: undergraduates craft their own online learning modules. In: *International Journal of Innovation in Education, Vol. 1, No. 1 (2009), pp. 96-119*.
- [25] **Birkenkrahe**, M. (2008). System constellations as tool supporting organisational learning and change processes. In: *International Journal of Learning and Change, Vol. 3, No. 3 (2008), pp. 125-144*.
- [24] Benz, A. and **Birkenkrahe**, M. (2008). Ready for the Island? Paradigm change in business application systems through Web 2.0 (German: Reif für die Insel? Paradigmenwechsel bei betrieblichen Web 2.0 Anwendungen). In: *WiWi-Online, www.odwww.net (2008), pp. 1-6, Print ISSN: 1867-1225*.
- [23] **Birkenkrahe**, M. (2008). If You Don't Know Where You Are Going, Any Road Will Get You There – Responsibility and Modern Management. In: *FHW-Forschung*.
- [22] **Birkenkrahe**, M., McDermott, R., Iske, P. and Lank, E. (2006). The Public Voice: Managing a Pan-European Community, in: *KM Review, Vol. 8, No. 6 (2006)*.
- [21] **Birkenkrahe**, M. (2004). No Wings Without Roots – What To Do When A Great Deal Fails? Managing Transactions With System Constellations. In: *The Outsourcing Project, Special Report, Montgomery Europe Research, June 2004*.
- [20] **Birkenkrahe**, M. and Mitleton-Kelly, E. (2004). Treasury Operations in a Large Multinational as a Complex Evolving System – Dialogue on Using Natural Experiments in Complex Evolving Systems. In: *Complexity Theory and the Management of Networks, Imperial College Press, London, 2004, pp. 89-102*.
- [19] **Birkenkrahe**, M. (2002). How Large Multi-Nationals Manage Their Knowledge“. In: *University of Auckland Business Review, Vol. 4, No. 2 (2002), pp. 2-12, September 2002*.
- [18] **Birkenkrahe**, M. (2001). Turtles all the way down and all the way up: the Future of Knowledge Management in the New Economy (II). In: *Knowledge Management, Vol. 4, No. 5 (2001), pp. 26-29*.
- [17] **Birkenkrahe**, M. (2000). Turtles all the way down and all the way up: the Future of Knowledge Management in the New Economy (I). In: *Knowledge Management, Vol. 4 No. 4 (2000), pp. 31-34*.

- [16] **Birkenkrahe**, M. (2000). The Seven Spiritual Laws of Successful Knowledge Management. In: *Knowledge Management, Vol.4, No. 3 (2000) 15-19, November 2000.*
- [15] **Birkenkrahe**, M. (1998). Building Knowledge Communities. In: *Petroleum Review Special Supplement ("Lifetime Learning"), February 1998, pp. 16-17, 1998.*
- [14] **Speh**, M. (1998). KMunity – Building Knowledge Communities at Shell. In: *Knowledge Management, Vol. 1, No. 3 (1998) pp. 3-8, September 1998.*
- [13] **Speh**, M. (1997) Knowledge Management – A New Role for Information Professionals. In: *ASLIB Handbook of Special Librarianship and Information Work (10th edition), Aslib, ed. Alison Scammell, 1997, pp. 31-39.S*
- [12] **Speh**, M. (1996). Enabling a global community of knowledge. In: *Aslib proceedings, Vol. 48, No. 9, pp. 199-203.*
- [11] **Speh**, M. (1995). A Virtual Programming Course Using The MOO. In: *Diversity University Journal of Virtual Education, Vol. 1, No. 1, January 1995.*
- [10] **Speh**, M. (1995). C++ and the World-Wide Web, 1994. In: *"C++ Report", SIGS Publication, ed. Stan Lippman, January 1995.*
- [9] **Speh**, M. (1994). Object-Oriented, Literate Design of a Multigrid Toolkit for Lattice Gauge Theory Simulations. Dissertation, 181 pages, University of Hamburg preprint.
- [8] **Speh**, M., Butts, C., Reilly, C., Wang, J. (1994). The Globewide Network Academy and the World-Wide Web, Proceedings of the 1st Int. WWW conference, CERN, Geneva, Switzerland, 25-27 May 1994. In: *Special issue "Computer Networks and ISDN systems", Elsevier Science BV, Amsterdam.*
- [7] **Speh**, M. (1994). Teaching & Learning with the Web: An Active Virtual C++ Course, Workshop at CERN, Geneva, Switzerland, 26-27 May 1994. In: *Special issue of "Computer Networks and ISDN Systems", Elsevier Science BV, Amsterdam.*
- [6] Bäker, M., Mack, G., **Speh**, M. (1992). Multigrid meets neural nets. In: *Proceedings of the Int. Symposium on Lattice Field Theory, Amsterdam, 15-19 Sep 1992; J. Smit and P. van Baal (eds), Nucl. Phys. B (Proc. Suppl.) 30 (1993) p. 269.*
- [5] Bäker, M., Kalkreuter, T., Mack, G., **Speh**, M. (1992). Neural multigrid for gauge theories and other disordered systems. In: *Proceedings of the 4th International Conference on Computational Physics PC '92, Prague, Aug 1992. Int. J. Mod. Phys. C4(2) (1993) p. 239.*
- [4] Kalkreuter, T., Mack, G., Palma, G., **Speh**, M. (1992). Effective Field Theories. In: *Proceedings of the 31st Internationale Universitätswochen für Kern- und Teilchenphysik, Schladming, Austria, 1992; H. Gausterer, C. B. Lang (eds), Springer Lecture Notes in Physics No. 409 (Springer-Verlag, Heidelberg, 1992).*
- [3] Kalkreuter, T., Mack, G., **Speh**, M. (1992). Blockspin and multigrid for staggered fermions in non-Abelian gauge fields. In: *Proceedings of the workshop on Fermion Algorithms, HLRZ, Jülich, Germany, 10-12 April 1991; H. J. Hermann and F. Karsch (eds), Int. J. Mod. Phys. C3 (1992) 121. With: T. Kalkreuter, G. Mack.*
- [2] Lorenz, E., Mageras, G. and **Speh**, M. (1991). Test of a hadron calorimeter module with photodiode readout between 1-GeV and 10-GeV. In: preprint MPI-PHE-91-02, Max Planck Institute of Physics, Munich, Germany.
- [1] **Speh**, M. (1990). Low temperature expansion of the Ising model on a four-dimensional hyper-cubical lattice. (In German). Diploma thesis. In: preprint MPI-PHT-90-05, Max Planck Institute of Physics, Munich, Germany.
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Talks, Outreach Presentations and Media Coverage

AI in Education. Invited talk at Kiwanis meeting, Batesville, September 2025.

Quoted in "How Professors Are Navigating AI in the Classroom," Chronicle of Higher Education, September 2025.

Generative AI in Research: Tool, Muse, or Mirror? At: International Conference of Education, Research and Innovation, Seville, Spain, November 10-12, 2025. (*Abstract accepted*).

Generative AI as Muse or Tool in the Research Process, at: Oklahoma University Data Science Workshop, June 27, 2025.

Artificial Intelligence: Muse or Tool, at: Faculty Colloquium, Lyon College, April 25, 2025.

Teaching data science with literate programming tools: A mighty fortress against the dangers of AI-assisted coding?, at: Oklahoma University Data Science Workshop, March 22, 2024.

Data Science for Everyone - Visualizing Solar Eclipse Data. STEM Demo workshop, at: Lyon College Discovery Day, February 24, 2024. URL: <https://github.com/birkenkrahe/org/blob/master/SolarEclipseMAC.org>.

The Role of AI Coding Assistants: Revisiting the Need for Literate Programming in Computer and Data Science Education, at: International Conference on Technology, Education and Development, Valencia, Spain March 4-6, 2024. URL: library.iated.org/view/BIRKENKRAHE2024ROL

The Role of AI Coding Assistants: Revisiting the Need for Literate Programming in Computer and Data Science Education, at: University of Arkansas School of Medical Sciences - College of Public Health Management, February 22, 2024.

Teaching data and computer science with literate programming tools: A case study in mandating Emacs and Org-mode across a range of courses, at: University of Arkansas School of Medical Sciences - Department of Biomedical Informatics, December 14, 2023.

Teaching computer and data science with literate programming tools, at: EmacsConf 2023, December 2, 2023. URL: emacsconf.org/2023/talks/teaching/

The Future of AI in Education, at: Annual Conference of the Arkansas College Teachers of Business and Economics, Lyon College, September 22, 2023.

Revising the Need for Literate Programming in Data Science & Software Engineering Education, at: Southeast Symposium on Contemporary Engineering Topics, Little Rock, Arkansas, September 15, 2023.

Medical AI - How Machine Learning Can Help Your Publishing Career, at: White River Medical Center, August 8, 2023.

Game programming in Snap! STEM Demo workshop, at: Lyon College Open Day, March 4, 2023.

"...Sometimes the best you can do is to start over." - People, Patterns & Programs along my journey from Berlin, Germany, to Batesville, Arkansas, at: APPLE-Upward Bound, Lyon College, June 14, 2022.

Teaching data science with hacker tools: literate programming didactics, at: Faculty Colloquium, Lyon College, April 8, 2022.

Creation of a Business Technology Certificate Course for Catholic Polytechnic University, at: CPU Board of Directors meeting, Los Angeles, January 27, 2021.

We Remember The Past - We Do Not Remember The Future - My Experiences With Online Teaching, at: Applied University of Public Administration and Public Service, Altenholz, Germany, May 20, 2020.

Keynote: *Agile Project Management with Scrum – Prototypes, Stories and Dialog*, at: Berlin School of Economics and Law, Berlin, 16th December 2019.

Can Computers Learn Language? Natural Language Processing and Linguistics, at: West Chester University, Department of Languages, 14th November 2019.

Lifelong Learning, at: Siemens Graduate Program Alumni Conference, Berlin, 5th July 2019.

The Good, The Bad and the Ugly – mastering the digital turn with business informatics, at: Open Day, Berlin School of Economics and Law, Campus Schöneberg, 31st May 2018.

E-Teaching and E-Learning, at: Potsdam Graduate School, 18th September 2017.

Keynote: *How to instruct, engage and immerse students using Moodle-based MOOCs*, at: 13th Internationale Tagung Wirtschaftsinformatik, St. Gallen, Schweiz, 13th February 2017.

E-Teaching and E-Learning Scenarios: Instruction, Interaction and Immersion, at: Berlin Centre of Higher Education, 26 September 2016.

Keynote: *Content Co-Creation and Collaboration in the Digital Classroom*, at: Ecole Hôtelière de Lausanne (EHL), Lausanne, Schweiz, 7th September 2016.

Startup Process Modeling, at: Symposium with IDC Herzliya Business School, Tel Aviv, 29th August 2016.

MOOCs with Moodle, at: 4th Research Forum of the Berlin School of Economics and Law, Berlin, 25th January 2016.

E-Teaching and E-Learning in Executive Education at the Institute of Management Berlin, at: AMBA accreditation meeting, 18th November 2015.

E-Learning Offerings at the Berlin School of Economics and Law, at: ZKI AK E-Learning, Berlin 4th November 2015.

Keynote: *Conflicts: unavoidable and sometimes positive*, at: Staff assembly, Berlin School of Economics and Law, 17th June 2015.

Playing with Identity in the Virtual Classroom, at: 13th Tagung des Arbeitskreises Evaluation und Qualitätssicherung Berliner und Brandenburger Hochschulen, Umweltforum Berlin, 24th May 2012.

Keynote (with Prof C Spannagel): *Strengthening Student Self-Responsibility with Blended Learning*, at: E(r)lernen: Zukunftskonzepte zur Lehre mit den neuen Medien, 24th September 2012.

Keynote: *E-Learning and Continuing Education Tools – and What Else Is Hidden in Blended Learning*, at: 22nd Glienicke Dialog, Berlin, 5th May 2011.

The Max Planck Digital Library: Dialogue and Decisions for Excellence in Science, at: symposium of the Max-Planck-Society, Munich, 27th April 2006.

Is leadership culture-dependent? - Leadership culture in England and Germany, at: Forum Repräsentanz, Deutsche Gesellschaft für Personalführung e.V. (DGFP), Berlin, 28 March 2006.

The Inner CEO – Making Multitasking Work For You, at: UNESCO, Paris, 9th December 2005.

Guest lecture: *Change Management Practice*, in: “Strategic Management”, at: ESCP-EAP (European Economic University), Berlin 2 November 2005.

Keynote: *Executive Coaching and Organisational Constellations*, at: Leaders Forum of the Academy of Chief Executives, David Salomon’s Estate, Southborough, Kent, May 10, 2005.

Keynote: *CHANGE - The Only Constant in Life*, at: Old Table, International Club Berlin, April 4, 2005.

Keynote: *No Wings Without Roots – Managing organisational knowledge using constellations*, at: KM UK, London, June 15, and Masterclass: *Managing by Systemic Constellations*, June 16, 2004.

Introduction to Organisational Constellations, at: Final meeting of the European Knowledge Management Forum, KM Europe 2003, Amsterdam, Netherlands, November 12, 2003.

Keynote: *How Large Multi-Nationals Manage Their Knowledge*, The Auckland Club, Auckland, New Zealand, September 26, 2002.

Keynote: *Knowledge Management for the New Millenium*, at: International Conference on XXI Century Organisations, Bizcaia, Spain, 1 October 2001.

Keynote: *Knowledge Management And Financial Services – Why Does The Marriage Fail?*, at: Knowledge Management in the Financial Services Industry, London, 18 September 2001.

Keynote: *The Future of Knowledge Management in the New Economy*, at: Strategic HR for Competitive Knowledge Management, London, 27 March 2001.

Keynote: *‘Turtles all the way down and all the way up’ – The future of knowledge management in the new economy*, at: KM Europe, Brussels, 20 November 2000.

Keynote: *Knowledge Management and Competitive Intelligence – New Tools for the Oil Industry*, at: 30th Anniversary of the Instituto Mexicano del Petroleo, Mexico City, 31 August, 2000.

Keynote: *Knowledge Management and Competitive Intelligence – Future Perspectives*, at: SCIP 2000 (Society for Competitive Intelligence), Atlanta, 30 March 2000.

Managing M&A Knowledge Globally and ‘The Art of M&A’ – How Shell Is Building A Bridge Between These Two“, at: Meeting of the Institute of Knowledge Management, Dublin, 12 June, 2001.

Views on Scenario Building as a Strategy Tool, at: Chatham House Forum Annual Review, London, 11 July 2000.

Some Thoughts On The Situation Of Very Large Multinationals In The New Economy, at: Oil and Money '99, 17 November 1999.

Knowledge Management for Shell Finance Services, at: Online Information for the City, London, 14 October 1999.

Knowledge Management and New Ways of Working at Shell, at: European Round Table Knowledge Management Meeting, Adastral Park, 8 October 1999.

Strategic Knowledge Management – How to win with the competencies you already have, at: CORPLAN 1999, London, 20 September 1999.

Deep Impact – Finance Services in the Knowledge Economy, at: Managing Knowledge and Measuring Intellectual Capital, 7 September 1999.

The Zero Effect – Strategic Sourcing in the Knowledge Economy, at: Managing the Value of IT, London, 20 April 1999.

Planning and Implementing Knowledge Management at Shell, at: United Nation Development Programme (UNDP), New York, 11 December 1998.

Competitive Intelligence in Shell, at: GlaxoWellcome Global Competitive Intelligence Meeting, London, 9 November 1998.

Leveraging Strategic Knowledge To Help Your Business Win, at: CORPLAN 1998, London, 30 September, 1998.

A Knowledge Management Strategy for Shell, at: Strategic Planning Society, London, 3 July 1998.

Teaching

Undergraduate Courses:

- COR 100/Year 1: Snap! Programming Playground / Game Programming with Python
- CSC 100/109: Introduction to Programming in C++ / Python
- CSC 105: Digital humanities (Natural Language Processing)
- DSC 101: Data science tools and methods
- DSC 105: Introduction to data science (with R and Python)
- DSC 205: Advanced introduction to data science (with R/Python)
- CSC 255: Computer Architecture
- DSC 302: Data visualisation (with R/Python/Power BI)
- DSC 305: Machine learning (with R/Python)
- CSC 330: Database theory & applications (with SQL/SQLite)
- CSC 410: Data Communication and Networks
- CSC 420: Operating systems (with Linux/Raspberry Pi)
- DSC 482.01: Artificial Intelligence
- DSC 482.02: Data modelling / Modeling and Simulation with Python
- DSC 482.03/MTH 445: Applied maths for data science
- DSC 482.04: Coding in an AI World - Coding becomes Conversation
- 209003: Digital transformation research methods
- 290841: Introduction to Higher Education Studies
- 315001: Principles of Business Informatics
- 315002: Business Information Systems
- 315003: Database Management Systems
- 316101: Enterprise Modelling
- 400792: Business Applications
- 401591: Supervision Internship
- 454101: Business Process and Information Management

Graduate Courses:

- 504092: Machine Learning (MA Accounting & Controlling)
- 589901: Research Methodology (MSc Business Intelligence)
- 800124: Problem-Solving and Decision-Making Techniques (MBA)
- 840106: Consulting and Project Management (MBA, MA Int. Bus. Mgmt.)
- 810003: Business Applications (MBA)
- 810001: Business Information Systems and Data Analytics (MBA)

Summer School:

- Cross-Cultural Management (European Business and Economics Programme)
- Introduction to Programming in C/C++

Online Courses:

- Business Information Systems (8 weeks) – Master level
- Research Methodology (8 weeks) - Master level

Coordination:

- SAP ERP Users Group (SAP University Alliance)
- Research Colloquium (Bachelor, Master, PhD students)
- Business Brown Bag Lunch Seminars (current research projects)

Selected Thesis Topics (2016-2020)²:

- “Healthcare Process Analysis with Process Mining” MBA (Huang, 2020)
- “Agile Product Development Teams in a distributed work environment” MBA (Loktionov, 2020)

² Some thesis titles translated from German. All titles available via the Library of the Berlin School of Economics and Law, Berlin, Germany.

- “Business models that enable the monetization of Distributed Ledger / Blockchain Technologies.” MBA (Roßbander, 2020)
- “How can Robotic Process Automation support the digital transformation of the customer onboarding process in European commercial banks?” MBA (Vagni, 2020)
- “Is Artificial Intelligence possible? How could it emerge and what are the parallels to human and biological intelligence?” B.Sc. (Sotke, 2020)
- “Comparing Gamification In Selected Language-Learning Apps” B.Sc. (Özmen, 2019)
- “Opportunities and Threats of deploying machine learning in E-Commerce” B.Sc. (Düzel, 2019)
- “Potential Impact of machine learning applications for banking services” MBA (Fröhlich, 2019)
- “Digitalization and Strategy in Health Care Providers” MBA (Herbert, 2019)”
- “Self Service Business Intelligence as a Corporate Application System” MBA (Adam, 2019)
- “Dashboards in Agile Software Development” B.Sc. (Nürnberg, 2019)
- “Process Mining as a Diagnosis Tool for Business Processes” MBA (Decker, 2019)
- “Concept of a course on business information systems as a Multiplayer Classroom” B.Sc. (Fischer, 2018)
- “Successful Implementation of Open Source Software in Public Administration” B.Sc. (Schneider, 2018)
- “Real-world Detection of Personal Attributes in Ethereum Blockchain Smart B.Sc. Contracts” (Fuchs, 2018)
- “Realising Design-Thinking Projects in regionally differentiated Remote Teams using a Project of Siemens Real Estate to Increase Customer Satisfaction” B.A. (Kirchner, 2018)
- “The Impact of Invisible User Interfaces on User Experience Design for IoT Products B.Sc. (Hoang, 2017)
- „Agile business process modelling with BPMN for prescription delivery in a Pharmacy“ B.A. (Tran, 2016)
- “Technical Process Mining for the Evaluation of M2M Communication in Vehicle Production” B.Sc. (Yüre, 2016)

Miscellaneous

LinkedIn: [linkedin.com/in/birkenkrahe/](https://www.linkedin.com/in/birkenkrahe/)
 Twitter/X: twitter.com/birkenkrahe
 GitHub: github.com/birkenkrahe/
 Wikipedia: en.wikipedia.org/wiki/Marcus_Birkenkrahe