

Curriculum Vitae: Georg Dorffner, ao.Univ.-Prof. Dipl.-Ing. Dr.

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Address:

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Personal Data

Date of Birth: Oct 27, 1962

Place of Birth: Vienna

Nationality: Austrian

Marital status: married, 3 children (born 1990, 1993, 1996)

Education

1994 Habilitation (tenure) at the University of Vienna, Medical School, topic: Neural networks in medical applications

1987-1989 Ph.D. in Computer Science, Indiana University

1985-1986 M.S. in Computer Science, Indiana University

1980-1985 M.S. (Dipl.-Ing.) in Computer Science, Vienna Univ. of Technology

1980-1985 M.S. (Dipl.-Ing.) in Communication Engineering, Vienna Univ. of Technology

Employment History

Since 1995 Associate Professor at the Institute of Artificial Intelligence (formerly the Dept. of Medical Cybernetics and Artificial Intelligence, University of Vienna) as part of the Center for Medical Data Science (CeDAS), Medical University of Vienna

Since 2014 Curriculum director of the Master programme in Medical Informatics, Medical University of Vienna

Since 2014 Head of Clinical Trials at The Siesta Group Schlafanalyse GmbH

2018-2020 Interim Head, Section for Artificial Intelligence & Decision Support (AID), Medical University of Vienna

2002-2014 Managing director of the startup company The Siesta Group (50% leave from univ.)

2010-2013 Part-time senior manager at Philips Home Healthcare Solutions (Philips Respironics), Vienna/Pittsburgh.

1988-2007 Head of the Neural Computation Group at the Austrian Research Institute for Artificial Intelligence (OFAI)

1987-1994	Assistant Professor at the Dept. of Medical Cybernetics and Artificial Intelligence, University of Vienna
1985-1986	Research Assistant, Phonetics Laboratory, Indiana University
1985	Research Assistant, Austrian Research Institute for Artificial Intelligence (OFAI)
Other activities	
Since 2023	Member of the Ethical Committee of the Medical University of Vienna, with agendas concerning AI-related project applications
Since 2019	Vice President of the Austrian Society for Artificial Intelligence (ASAI)
2002-2003, since 2009	Consultant to the European Commission in the preparation of several research programmes in the areas “Future and Emerging Technologies” and “Pathfinder”, Co-Chair, Evaluator and Reviewer.
2004-2014	Contractor in several phase I and phase II pharmaceutical trials in the USA and Europe, representing The Siesta Group as scoring provider, statistician and/or project manager.
2003-2004	Chair of an Austrian focus group developing a research strategy for Cognitive Science, presented to the Austrian Council for Research and Technology Development. This initiative eventually lead to the establishment of the Middle-European Master of Cognitive Science and several CS-related funding programmes.
2001-2003	Voted into the three top-candidate lists (“Dreiervorschlag”) for full professorships at the Universities of Innsbruck and Salzburg, and the University of Technology Graz.
2002	Foundation of the start-up company The Siesta Group as a spinoff from the EU project SIESTA, devoted to developing and applying software for analyzing sleep laboratory data (polysomnography)
2000-2001	Member of the Task Force group for the preparation of the “Lifelike perception systems” initiative of the EU-Commission (IST-FET).
1993-2002	Teaching assignment at the Technical University Ilmenau, Germany
2001	General Chair of the International Conference on Artificial Neural Networks (ICANN 2001)
1997-2000	Coordinator of the EU-Commission-funded international project SIESTA (Biomed 2, 4 th framework)
1997	Visiting Scholar, Psychology Dept., Boston University
1991	Teaching assignment at the University of Zurich

Major Areas of Research; and Achievements

- Neural networks for Machine Learning; creation of the new learning method “conic section function networks” (CSFN), development of Bayesian techniques
- Signal and time series processing; project leader in developing the first fully validated sleep scoring algorithm (Somnolyzer), discovery of correlations in suicide time series
- Medical Applications of Machine Learning; various clinical achievements in prediction modeling

Recent Funded Projects

<i>Period</i>	<i>Organization</i>	<i>Short Title, Role</i>	<i>K€/year</i>
2023-2027	EU, Digital Europe	DS4Health - International Master's Program Empowering Healthcare through Digital Technology, co-PI	50
2020-2024	Federal Ministry of Education, Science and Research	Digital Skills, Knowledge and Communication for Students of Medicine (DSKC), PI	100
2020-2022	FFG	Deep learning for improved nuclei segmentation and knowledge transfer methods in microscopic images, co-PI	8
2015-2018	WWTF	Imaging neuronal circuits of the prefrontal cortex during a gambling task, co-PI	45
2007-2010	FWF	Multi-sensor sleep modeling based on contextual data fusion, Principal investigator	88
2003-2007	EU FP6, IST	New sensors for sleep and wakefulness monitoring (SENSATION), PI	58
2004-2007	EU FP6, Cognitive Systems	Exploring and Exploiting the Concept of Affordances for Robot Control (MACS), PI	127

Selected Recent Publications

- Agibetov A, Kammerlander A, Duca F, Nitsche C, Koschutnik M, Donà C, Dachs TM, Retzl R, Stria A, Schrutka L, Binder C, Kastner J, Agis H, Kain R, Auer-Grumbach M, Samwald M, Hengstenberg C, Dorffner G, Mascherbauer J, Bonderman D. Convolutional Neural Networks for Fully Automated Diagnosis of Cardiac Amyloidosis by Cardiac Magnetic Resonance Imaging. *J Pers Med.* 2021 Dec 1;11(12):1268.
- Agibetov A, Seirer B, Dachs TM, et al. (2020) Machine Learning Enables Prediction of Cardiac Amyloidosis by Routine Laboratory Parameters: A Proof-of-Concept Study. *J Clin Med.* 9(5):E1334. doi: 10.3390/jcm9051334.
- Aschauer S, Dorffner G, Sterz F, Erdogmus A, Laggner A. A prediction tool for initial out-of-hospital cardiac arrest survivors. *Resuscitation.* 2014 Sep;85(9):1225-31. doi: 10.1016/j.resuscitation.2014.06.007.
- Brandmayr G, Hartmann M, Fürbass F, Matz G, Samwald M, Kluge T, Dorffner G. Relational local electroencephalography representations for sleep scoring. *Neural Netw.* 2022 Oct;154:310-322.
- Frühwirt W., G. Dorffner, S. Roberts, M. Gerstgrasser, D. Grosseegger, R. Schmidt, P. Dal-Bianco, G. Ransmayr, H. Garn, M. Waser, and T. Benke, (2019) Associations of Event-Related Brain Potentials and Alzheimer's Disease Severity: A Longitudinal Study, *Prog Neuropsychopharmacol Biol Psychiatry*, 92: 31-38. doi: 10.1016/j.pnpbp.2018.12.013.

- Kenn M, Karch R, Singer CF, Dorffner G, Schreiner W. Flexible Risk Evidence Combination Rules in Breast Cancer Precision Therapy. *J Pers Med*. 2023 Jan 5;13(1):119.
- Leser C, Dorffner G, Marhold M, Rutter A, Döger M, Singer C, König-Castillo DM, Deutschmann C, Holzer I, König-Castillo D, Gschwantler-Kaulich D. Liver function indicators in patients with breast cancer before and after detection of hepatic metastases-a retrospective study. *PLoS One*. 2023 Mar 3;18(3):e0278454.
- Ludwig B, König D, Kapusta ND, Blüml V, Dorffner G, Vyssoki B. (2019) Clustering suicides: A data-driven, exploratory machine learning approach. *Eur Psychiatry*. 62:15-19. doi: 10.1016/j.eurpsy.2019.08.009.
- Mahbod A, Polak C, Feldmann K, Khan R, Gelles K, Dorffner G, Woitek R, Hatamikia S, Ellinger I. NulnsSeg: A fully annotated dataset for nuclei instance segmentation in H&E-stained histological images. *Sci Data*. 2024 Mar 14;11(1):295.
- Mahbod A, Dorffner G, Ellinger I, Woitek R, Hatamikia S. Improving generalization capability of deep learning-based nuclei instance segmentation by non-deterministic train time and deterministic test time stain normalization. *Comput Struct Biotechnol J*. 2024 Jan 3;23:669-678.
- Mahbod A, Schaefer G, Dorffner G, Hatamikia S, Ecker R, Ellinger I. A dual decoder U-Net-based model for nuclei instance segmentation in hematoxylin and eosin-stained histological images. *Front Med (Lausanne)*. 2022 Nov 11;9:978146.
- Mahbod A, Schaefer G, Wang C, Dorffner G, Ecker R, Ellinger I. (2020) Transfer learning using a multi-scale and multi-network ensemble for skin lesion classification. *Comput Methods Programs Biomed*. 193:105475. doi: 10.1016/j.cmpb.2020.105475.
- Punjabi, NM, Shifa N, Dorffner G, et al. (2015). Computer-Assisted Automated Scoring of Polysomnograms Using the Somnolyzer System. *Sleep* 38(10): 1555-1566. doi: 10.5665/sleep.5046.
- Ratzinger F, Haslacher H, Perkmann T, Pinzan M, Anner P, Makristathis A, Burgmann H, Heinze G, Dorffner G. (2018). Machine learning for fast identification of bacteraemia in SIRS patients treated on standard care wards: a cohort study. *Scientific reports* 8(1):12233. doi: 10.1038/s41598-018-30236-9.
- Schrutka L, Anner P, Agibetov A, Seirer B, Dusik F, Retzl R, Duca F, Dalos D, Dachs TM, Binder C, Badr-Eslam R, Kastner J, Beitzke D, Loewe C, Hengstenberg C, Laufer G, Stix G, Dorffner G, Bonderman D. Machine learning-derived electrocardiographic algorithm for the detection of cardiac amyloidosis. *Heart*. 2022 Jun 24;108(14):1137-1147.
- Vyssoki B, Kapusta ND, Praschak-Rieder N, Dorffner G, Willeit M. (2014) Direct effect of sunshine on suicide. *JAMA Psychiatry*. 71(11):1231-7. doi: 10.1001/jamapsychiatry.2014.1198.
- Wallisch C, Agibetov A, Dunkler D, Haller M, Samwald M, Dorffner G, Heinze G. The roles of predictors in cardiovascular risk models - a question of modeling culture? *BMC Med Res Methodol*. 2021 Dec 18;21(1):284.