

Curriculum vitae

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PERSONAL INFORMATION

Butz, Martin V.

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Nationality: German

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EDUCATION

- 2004 PhD in Computer Science
University of Illinois at Urbana-Champaign, IL, USA
- 2001 Diploma in Computer Science, minor in psychology (equiv. MSc, with distinction)
Faculty of Mathematics and Computer Science, University of Würzburg, Germany

CURRENT POSITIONS

- 2011 – Full Professor (W3) in Cognitive Modeling, **Dep. of Computer Science & Dep. of Psychology, Faculty of Science, University of Tübingen**, Germany
- 2012 – Departmental coordinator of the cognitive science and computer science outgoing Erasmus programs, University of Tübingen
- 2016 – Dean of studies for the BSc and MSc programs in cognitive science, University of Tübingen
- 2017 – Faculty member of IMPRS-Intelligent Systems graduate school, Tübingen
- 2018 – PI in Cluster of Excellence on Machine Learning in the Sciences, University of Tübingen
- 2022 – Director of the Cognitive Science Center, University of Tübingen
- 2024 – President of German cognitive science society (GKev), Germany

PREVIOUS POSITIONS

- 09/2017 – 03/2018 Visiting Professor, University of Otago, Dunedin, New Zealand
- 04/2016 – 10/2016 Paternity leave (50%)
- 09/2007-08/2011 Assistant Professor (Emmy-Noether Group Leader), Cognitive Psychology & Artificial Intelligence, University of Würzburg, Germany (Emmy-Noether project: Cognitive Bodyspaces: Learning and Behavior)
- 08/2005-12/2005 Visiting Assistant Professor, University of Missouri – St.Louis, MO, USA.
- 10/2004-08/2007 Post-doctoral researcher, Cognitive Psychology, University of Würzburg, Germany. (EU project: MindRACES: From Reactive to Anticipatory Cognitive Embodied Systems)

FELLOWSHIPS AND AWARDS (2016-2026)

- 2025 Best poster award at KogWis 2025 with S. Dietrich, V. Seibold, A. Achimova, & B. Rolke
- 2024 Springer best paper award with R. Deibel, S. Eivazi, & S. Otte

- 2024 ENNS student award to PhD student Manuel Traub (joint paper)
- 2023 Editor's Highlight of our 2022 article in the Water Resources Research journal with T. Praditia, M. Karlbauer, S. Otte, S. Oladyshkin, & W. Nowak
- 2024 ENNS student award to MSc student Cosku-can Horuz (joint paper)
- 2022 ICDL 2022, SmartBot Challenge Winner, with C. Gumbsch, M. Adam, B. Elsner, & G. Martius
- 2019 Best paper award at ICANN 2019 with S. Otte & P. Rubisch
- 2017 Feodor Lynen Research Fellowship, Alexander von Humboldt Foundation, "Modeling normal and altered spatial memory and behavior with free energy-based formalizations of dynamic event predictive encodings"
- 2016 Best conference paper award at KogWis 2016 with J. Lohmann
- 2016 Best GKEv young researcher paper award, GKEv, with F. Schrodtt.

ORGANIZATION OF SCIENTIFIC MEETINGS (2013-2026)

- 2018 CONNECT Workshop (Computational Neuroscience of Event Cognition) in Dunedin, Otago University, New Zealand (co-organizer).
- 2016 CIN-Workshop on "Conscious Artificial Systems" in Tübingen, Germany (main organizer).
- 2016 VECTOR Workshop (Virtual environments: Current topics in psychological research) in Tübingen, Germany (co-organizer).
- 2014 12th Biannual Conference of the German Cognitive Science Society in Tübingen, Germany, 29.9.-2.10.2014 (KogWis 2014).
- 2013 – 2016 Student-Volunteer Chair for the International Cognitive Science conference (CogSci)

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2016 – 2023 Sebastian Otte – Post-Doctoral Researcher, PhD in 12/2017. beginning 09/2023: Associate Professor (W2) in Robotics, University of Lübeck.
- 2019 – 2023 Asya Achimova – Post-Doctoral Researcher, Now: Emmy Noether research group leader (granted 04/2023).
- 2011 – 2019 Anna Belardinelli – Habilitation in Cognitive Science, 2019: "The objects of attention: from looking to acting", University of Tübingen, Germany
- 2008 – 2014 Oliver Herbort – Habilitation in Psychology, 2014: "Antizipation in sequenziellen Bewegungen", University of Würzburg, Germany.
- 2010 – Supervision of 13 graduated PhD students; Another 12 graduated PhD students as second supervisor
- 2010 – Main supervision of 60 BSc and 39 MSc theses in cognitive science and computer science.

TEACHING ACTIVITIES (2013-2026, all at University of Tübingen)

- 2012 – 2026 Cognitive Architectures, BSc standard mandatory class, cognitive science, yearly
- 2012 – 2026 Laboratory research projects, MSc elective, cognitive science, on demand individually, ongoing
- 2020 & 2022 & 2025 & 2026 Seminar on "AI, Future, & Society", BSc and MSc standard seminar, cross-disciplinary
- 2021 & 2022 & 2024 Generative & Recurrent Artificial Neural Networks, MSc standard elective class, computer-, cognitive science, & machine learning

2016 & 2018	Advanced Artificial Neural Networks, MSc standard elective class, computer- and cognitive science
2013– 2026	Cognitive Modeling, MSc standard mandatory class, cognitive science, 2013, 2015, 2018, since 2020- yearly
2013	Machine Learning of Behavior, MSc standard elective class, computer- and cognitive science
2013 – 2026	Seminar series on “Selected Topics in Cognitive Science”, MSc and BSc standard/mandatory elective seminar, Cognitive Science, yearly
2014 – 2018	Computer Science II, BSc extended mandatory class, computer and cognitive science, 2014, 2017, & 2018
2013	Computer Science I, BSc extended mandatory class, computer and cognitive science

REVIEWING ACTIVITIES

Reviewer for ERC starting and advanced grants; more than twenty further grant proposals (including DFG); more than ten stipend proposals (including Humboldt foundation, Studienstiftung).

Regular reviewer for major international journals and conferences in machine learning and cognitive science (including NeurIPS and CogSci as well as more than 20 different journals over the last 10 years)

MAJOR COLLABORATIONS (outside of Tübingen)

- Prof. Stefan Kiebel, cognitive computational neuroscience, University of Dresden, Germany
- Prof. Andrea Kiesel, general psychology, University of Freiburg, Germany
- Prof. Katharina von Kriegstein, cognitive and clinical neuroscience, University of Dresden, Germany
- Prof. Pablo Lanillos Pradas, artificial cognitive systems, Radboud University, Nijmegen, NL
- Prof. Georg Martius, machine learning and robotics, University of Tübingen, Germany
- Prof. Wolfgang Nowak, modelling hydraulic and environmental systems, University of Stuttgart, Germany
- Prof. Hans-Christoph Nürk, diagnostics and cognitive neuropsychology University of Tübingen, Germany
- Prof. Bettina Rolke, evolutionary cognition, University of Tübingen, Germany
- Prof. Volker Wulfmeyer, physics and meteorology, University of Hohenheim, Germany

Publication Record

Publications in international peer-reviewed journals: 95

Further publications including conference and workshops contributions as well as chapters in edited books (all peer-reviewed): ~ 200

[Google Scholar](#): Citations overall: 8913; h-index: 50; i10-index: 168

Monograph

- Butz, M.V. & Kutter, E.F. (2017, January). *How the mind comes into being: Introducing cognitive science from a functional and computational perspective*. Oxford, UK: Oxford University Press.

Special Issues

- Martin V. Butz, David Bilkey, & Alistair Knott. Event-predictive cognition: From sensorimotor via conceptual to language-based structures and processes (2021). *TOPIC in Cognitive Science*, 13(1), 1-298.
- Anna Belardinelli & Martin V. Butz (2014). 12th Biannual Conference of the German Cognitive Science Society (Gesellschaft für Kognitionswissenschaft). *Cognitive Processing*, 15, supplement 1.
- Oliver Sigaud, Martin V. Butz, Giovanni Pezzulo, Oliver Herbort, & Robert Campbell (2013). Special issue on anticipatory behavior. *New Ideas in Psychology*, 31, 3, 217-350.

Ten Representative Publications

1. Achimova, A., Franke, M., & Butz, M. V. (2025). The alignment model of indirect communication. PlosOne. doi: PONE-D-24-57287R1
2. Butz, M. V. (2021). Towards strong AI. *Künstliche Intelligenz*, 35, 91–101. doi: 10.1007/s13218-021-00705-x
3. Butz, M. V., Achimova, A., Bilkey, D., & Knott, A. (2021). Event-predictive cognition: A root for conceptual human thought. *Topics in Cognitive Science*, 13, 10–24. doi: 10.1111/tops.12522
4. Butz, M. V., Bilkey, D., Humaidan, D., Knott, A., & Otte, S. (2019). Learning, planning, and control in a monolithic neural event inference architecture. *Neural Networks*, 117, 135-144. doi: 10.1016/j.neunet.2019.05.001
5. Butz, M. V., Mittenbühler, M., Schwöbel, S., Achimova, A., Gumbsch, C., Otte, S., & Kiebel, S. (2025). Contextualizing predictive minds. *Neuroscience & Biobehavioral Reviews*, 168, 105948. doi: 10.1016/j.neubiorev.2024.105948
6. Eppe, M., Gumbsch, C., Kerzel, M., Nguyen, P. D. H., Butz, M. V., & Wermter, S. (2022). Intelligent problem-solving as integrated hierarchical reinforcement learning. *Nature Machine Intelligence*, 4, 11–20. doi: 10.1038/s42256-021-00433-9
7. Gumbsch, C., Butz, M. V., & Martius, G. (2021). Sparsely changing latent states for prediction and planning in partially observable domains. *Advances in Neural Information Processing System*, 34, 17518–17531. (NeurIPS - top-tier conference)
8. Gumbsch, C., Sajid, N., Martius, G., & Butz, M. V. (2024). Learning hierarchical world models with adaptive temporal abstractions from discrete latent dynamics. *The Twelfth International Conference on Learning Representations*. (ICLR - top-tier conference)
9. Traub, M. & Butz, M. V. (2026, in press). Looking locally: Object-centric vision transformers as foundation models for efficient segmentation. *Proceedings of the 43th International Conference on Machine Learning*. (ICML - top-tier conference)
10. Traub, M., Otte, S., Menge, T., Karlbauer, M., Thuemmel, J., & Butz, M. V. (2023). Learning what and where: Disentangling location and identity tracking without supervision. *The Eleventh International Conference on Learning Representations*. (ICRL - top-tier conference)

Patents

- Andreas Alin, Martin V. Butz, Jannik Fritsch: EP 12150808. Vehicle with computing means for monitoring and predicting traffic participant objects.
- Sebastian Otte & Martin V. Butz: EP 3824412 A1 20210526 (EN). Method and apparatus for actively tuning a predictor to an input signal

Recent Public Outreach (selected)

- 19 May 2026: Invited talk: How do we actively contextualize our behaviour? CogSci Colloquium, Tübingen.
- Since 2025: [Cognitive Agents Podcast](#)
- 13. November 2025: Public talk: Human Intelligence in contrast to GenAI. Schwarm Technologies. Munich.
- 3. September 2025: Plenary talk: Actively Contextualizing Minds. KogWis 2025, GKey, Bochum.
- 7. April 2025: Plenary talk: How do we actively contextualize our behaviour? Context in Cognition Graduate Symposium, Tübingen.
- 13, November 2024: Public talk: KI: Nachahmen oder Verstehen? Integrata Akademie Public, Tübingen Westspitze.
- 4. May 2023: Public panel discussion: How our digital lives change our brains [Wie der digitale Alltag unser Gehirn verändert], Herrenhäuser Forum, Hannover, Germany, J. Brailovskaia, M. Butz, M. Korte, A. Schröder-Wrusch; Moderator: Vera Linss ([Report and Video online](#))
- 17. January 2022: Podcast: AI and Us—What Artificial Intelligence Means for our Lives, [Alexander von Humboldt Foundation](#), C. Becker-Asano, **M. Butz**, M. Gašić, T. Matzner, D. Rückert, A. van Wylsberghe
- Since 201s: You-Tube channel: <https://www.youtube.com/@CognitiveModeling>

Current Grants

Project Title	Funding source	Period	Role of the PI
Predictive processing during task decisions and task performance	DFG (German Research Foundation)	2026-2030	Main PI (2 PIs)
Machine Learning for improved understanding of L-A processes and feedback	DFG (German Research Foundation)	2024–2028	Main PI (2 PIs)
DeepSelf: Emergence of Event-Predictive Agency in Robots	DFG (German Research Foundation)	2022–2026	Main PI (2 PIs)
Modeling and understanding spatiotemporal environmental interactions (MUSTEIN)	ML CoE, Mini-graduate school, Tübingen University	2021–2024	Main PI (9 PIs)
Neural generative weather forecasting	Cyber Valley, Tübingen	2021–2025	Main PI (2 PIs)
Interplay of amodal and modal encodings underlying directional space-metric associations	DFG (German Research Foundation), direct own part of CRU 2718	2020–2027	Main PI (2 PIs)
Short-to-Mid scale weather forecasting with DNNs	EXC 2064, Intramural project, Tübingen University	2019–2023	Main PI (4 PIs)
Machine learning. New perspectives for science.	DFG (German Research Foundation), Cluster of Excellence EXC 2064	2019–2032	Co-PI (25 PIs)