
Curriculum Vitae - Sebastian Michelmann

Academic positions

- September 2023 onwards **Assistant Professor (tenure track)**, *Department of Psychology, New York University*
- June–August 2023 **Associate Research Scholar**, *Princeton Neuroscience Institute, Princeton University, Computational Memory Lab*
- 2020–2023 (May) **Postdoctoral Research Fellow**, *Princeton Neuroscience Institute, Princeton University, Computational Memory Lab, German Research Foundation (DFG) funded project 437219953*
- 2018–2020 **Postdoctoral Research Associate**, *Princeton Neuroscience Institute, Princeton University, Computational Memory Lab*
- 2012–2014 **Student Teaching Assistant**, *Department of Clinical Psychology, Biological Psychology and Psychotherapy Julius-Maximilians-Universität Würzburg*, Subjects: Introduction to Clinical Psychology (BSc), Clinical Psychology, Psychological Intervention and Clinical Neuropsychology (MSc)
- 2011–2012 **Student Research Assistant**, *Department of Clinical Psychology, Biological Psychology and Psychotherapy, Julius-Maximilians-Universität Würzburg, SSFB/Transregio 58 - TP B-1 Fear, Anxiety, Anxiety Disorders*

Education

- 2018 **PhD Psychology**, *School of Psychology, University of Birmingham, UK, Memory and Oscillations Lab*, Thesis title: "Temporal Dynamics and Mechanisms of Oscillatory Pattern Reinstatement in Human Episodic Memory."
2020 winner of the Glushko dissertation prize
- 2014 **Diploma Psychology (equivalent to Master)**, *Julius-Maximilians-Universität Würzburg, Würzburg, Germany, GPA: 1.1, non-compulsory subject: Computer Science*
(GPA 1.1 equivalent to US/Canada: 3.93 out of 4)
- 2016–2018 **Studies of Computer Science**, *Fern-Universität Hagen (distance learning), Hagen, Germany*
- 2011–2014 **Studies of Computer Science**, *Julius-Maximilians-Universität Würzburg, Würzburg, Germany*
- 2008–2014 **Studies of Psychology**, *Julius-Maximilians-Universität Würzburg, Würzburg, Germany*
- 2010–2011 **Studies of Psychology and Philology**, *Universidad de Salamanca, Salamanca, Spain*
Partnership program, additionally funded by PROMOS scholarship program of German Academic Exchange Service (DAAD)
- 2007 **High school diploma**, *Bodelschwingh-Gymnasium Herchen, Herchen, Germany, GPA: 1.3*
(GPA 1.3 equivalent to US/Canada: 3.8 out of 4, 1st percentile in cohort)

Teaching

- 2019–2020 **NEU Fall Junior Tutorial 2019**, *Princeton Neuroscience Institute, Princeton University*
- 2012–2014 **Introduction to Clinical Psychology (BSc), and Clinical Psychology, Psychological Intervention and Clinical Neuropsychology (MSc)**, *Julius-Maximilians-Universität Würzburg*, Student Teaching Assistant

Funding – Awards

- 2022 **Post-Doctoral Fellow Award**, *Cognitive Neuroscience Society (CNS)*, CNS Annual Meeting, San Francisco, 100 \$
- 2020–2022 **Postdoctoral Research Fellowship**, *German Research Foundation (DFG)*, (project 437219953), funded for 24 months (~ 85,000€), extended for 6 months
- 2020 **Robert J. Glushko Prize for Outstanding Doctoral Dissertations in Cognitive Science**, *Cognitive Science Society*, 10,000\$
- 2010 **PROMOS travel grant**, *German Academic Exchange Service (DAAD)*, 200€
- 2010–2011 **Scholarship of partnership with Universidad de Salamanca, Spain**, *Julius-Maximilians-Universität Würzburg, Germany*, the university annually selects one candidate per partner city and awards tuition, accommodation, and subsistence for the academic year

First author publications

- Michelmann, S.**, Hasson, U., & Norman, K. A. (2023). Evidence That Event Boundaries Are Access Points for Memory Retrieval. *Psychological Science*.
- Michelmann, S.**, Price, A. R., Aubrey, B., Strauss, C. K., Doyle, W. K., Friedman, D., Dugan, P. C., Devinsky, O., Devore, S., Flinker, A., Hasson, U., & Norman, K. A. (2021). Moment-by-moment tracking of naturalistic learning and its underlying hippocampo-cortical interactions. *Nature Communications*, 12(1), 5394.
- Michelmann, S.**, Staesina, B. P., Bowman, H., & Hanslmayr, S. (2019). Speed of time-compressed forward replay flexibly changes in human episodic memory. *Nature Human Behaviour*, 3(2), 143.
- Michelmann, S.**, Bowman, H., & Hanslmayr, S. (2018). Replay of stimulus-specific temporal patterns during associative memory formation. *Journal of Cognitive Neuroscience*, 30(11), 1577–1589.
- Michelmann, S.**, Treder, M. S., Griffiths, B., Kerrén, C., Roux, F., Wimber, M., Rollings, D., Sawlani, V., Chelvarajah, R., Gollwitzer, S., Kreiselmeyer, G., Hamer, H., Bowman, H., Staesina, B., & Hanslmayr, S. (2018). Data-driven re-referencing of intracranial EEG based on independent component analysis (ICA). *Journal of Neuroscience Methods*, 307, 125–137.
- Michelmann, S.**, Bowman, H., & Hanslmayr, S. (2016). The temporal signature of memories: Identification of a general mechanism for dynamic memory replay in humans. *PLoS Biology*, 14(8).

Second author publications

- Ngo, C. T., **Michelmann, S.**, Olson, I. R., & Newcombe, N. S. (2021). Pattern separation and pattern completion: Behaviorally separable processes? *Memory & Cognition*, 49(1), 193–205.
- Parish, G., **Michelmann, S.**, Hanslmayr, S., & Bowman, H. (2021). The Sync-Fire/deSync model: Modelling the reactivation of dynamic memories from cortical alpha oscillations. *Neuropsychologia*, 158, 107867.
- Krzemiński, D., **Michelmann, S.**, Treder, M., & Santamaria, L. (2020). Classification of P300 Component Using a Riemannian Ensemble Approach. In J. Henriques, N. Neves, & P. de Carvalho (Eds.), *XV Mediterranean Conference on Medical and Biological Engineering and Computing – MEDICON 2019* (pp. 1885–1889). Springer International Publishing.

- Griffiths, B. J., Parish, G., Roux, F., **Michelmann, S.**, Plas, M. v. d., Kolibius, L. D., Chelvarajah, R., Rollings, D. T., Sawlani, V., Hamer, H., Gollwitzer, S., Kreiselmeyer, G., Staresina, B., Wimber, M., & Hanslmayr, S. (2019). Directional coupling of slow and fast hippocampal gamma with neocortical alpha/beta oscillations in human episodic memory. *Proceedings of the National Academy of Sciences*, 116(43), 21834–21842.
- Andreatta, M., **Michelmann, S.**, Pauli, P., & Hewig, J. (2017). Learning processes underlying avoidance of negative outcomes. *Psychophysiology*, 54(4).
- Staresina, B. P., **Michelmann, S.**, Bonnefond, M., Jensen, O., Axmacher, N., & Fell, J. (2016). Hippocampal pattern completion is linked to gamma power increases and alpha power decreases during recollection. *eLife*, 5, e17397.

Other co-author publications

- D'Andrea, A., Basti, A., Tosoni, A., Guidotti, R., Chella, F., **Michelmann, S.**, Romani, G. L., Pizzella, V., & Marzetti, L. (2022). Magnetoencephalographic spectral fingerprints differentiate evidence accumulation from saccadic motor preparation in perceptual decision-making. *iScience*, 105246.
- Wallace, G., Polcyn, S., Brooks, P. P., Mennen, A. C., Zhao, K., Scotti, P. S., **Michelmann, S.**, Li, K., Turk-Browne, N. B., Cohen, J. D., & Norman, K. A. (2022). RT-cloud: A cloud-based software framework to simplify and standardize real-time fMRI. *NeuroImage*, 257, 119295.
- Meconi, F., Linde-Domingo, J., S. Ferreira, C., **Michelmann, S.**, Staresina, B., Apperly, I. A., & Hanslmayr, S. (2021). EEG and fMRI evidence for autobiographical memory reactivation in empathy. *Human Brain Mapping*, 42(14), 4448–4464.
- Treder, M. S., Charest, I., **Michelmann, S.**, Martín-Buro, M. C., Roux, F., Carceller-Benito, F., Ugalde-Canitrot, A., Rollings, D. T., Sawlani, V., Chelvarajah, R., Wimber, M., Hanslmayr, S., & Staresina, B. P. (2021). The hippocampus as the switchboard between perception and memory. *Proceedings of the National Academy of Sciences*, 118(50), e2114171118.

Book chapters

- Michelmann, S.**, Griffiths, B. J., & Hanslmayr, S. (2022). The role of alpha and beta oscillations in the human EEG during perception and memory processes. In *The Oxford Handbook of EEG Frequency* (p. 202). Oxford University Press.

Preprints

- Michelmann, S.**, Kumar, M., Norman, K. A., & Toneva, M. (2023). Large language models can segment narrative events similarly to humans. <https://doi.org/10.48550/ARXIV.2301.10297>
- Kumar, M., Goldstein, A., **Michelmann, S.**, Zacks, J. M., Hasson, U., & Norman, K. A. (2022, September 26). Bayesian surprise predicts human event segmentation in story listening. <https://doi.org/10.31234/osf.io/qd2ra>

Reviewing for peer reviewed journals

Elife, PLOS Biology, Science Advances, Neuroscience & Biobehavioral Reviews, Scientific Reports, Cerebral Cortex, Psychophysiology, Journal of Neuroscience Methods

Consulting

since 2020 **Cognition.run**, Consulting for the development of cognition.run, an online platform that facilitates behavioral research (www.cognition.run)

Volunteering

2009–2010, **Mentor for international students**, *International Office of Julius-Maximilians-Universität*
2011–2014 *Würzburg*

Skills

Presenting and Teaching KOMPASS certificate of basic and advanced training in tutoring and mentoring

Advanced Java, MATLAB, Python

Basic HTML, JavaScript

Languages

German Native speaker

English Fluent in speech, writing and reading *TOEFL-IBT (12/2013): reading 30/30, listening 30/30, speaking 24/30, writing 25/30, total 109/120*

Spanish Fluent in speech, writing and reading *Business Language Testing Service (BULATS) certificate: Level C1*

French Good in speech, proficient in writing and reading *Approximate Level B2*

Italian Basic in speech, Basic in writing and reading *Approximate Level B1*

Selected conference contributions

Michelmann S., Strauss, C., Doyle, W. K., Friedman, D., Melloni, L., Dugan, P., Devinsky, O., Devore, S., Flinker, A., Hasson, U., Norman, K. A. (April 2023): Tracking the reinstatement of event representations during continuous memory search with human ECoG. **Poster** presented at the *2023 International Conference on Learning and Memory*, Huntington Beach, USA

Michelmann S., Strauss, C., Doyle, W. K., Friedman, D., Dugan, P., Devinsky, O., Devore, S., Flinker, A., Hasson, U., Norman, K. A. (April 2022): Detecting slowly unfolding event patterns in naturalistic perception and memory with human ECoG. **Poster** presented at the *2022 Annual Meeting of the Cognitive Neuroscience Society (CNS)*, San Francisco, USA

Michelmann S., Price, A.R., Aubrey, B., Doyle, W.K., Friedman, D., Dugan, P.C., Devinsky, O., Devore, S., Flinker, A., Hasson, U., Norman, K.A. (August 2020): One shot learning of a naturalistic story improves predictions on a fast time-scale in the auditory cortex. **Talk** presented at the *2020 Context and Episodic Memory Symposium (CEMS)*, Virtual.

Michelmann, S., (August 2020) Temporal dynamics of episodic memory reinstatement. **Talk** at Glushko Dissertation Prize symposium, *2020 CogSci*, Virtual.

Michelmann, S., Staresina, B., S., Bowman, H., Hanslmayr S. (November, 2018) Forward and time-compressed replay of human episodic memories flexibly changes its speed. **Talk** in Nanosymposium presented at the *Annual Meeting of the Society for Neuroscience (SFN)*. San Diego, USA.

Michelmann, Griffiths, B.J., Staresina, B., Wimber, M., Chelvarajah, R., Rollings, D., Sawlani V., Hamer, H., Gollwitzer, S., Kreiselmeyer, G., Bowman, H., Hanslmayr S. (August, 2017) A mental chronometry of dynamic memory replay in humans. **Poster** presentation at *ICON, 13th international conference for cognitive neuroscience*, Amsterdam, Netherlands.

Michelmann, S., Treder, M. S., Griffiths, B.J., Kerren, C., Roux, F., Wimber, M., Rollings, D., Sawlani V., Chelvarajah, R., Gollwitzer, S., Kreiselmeier, G., Hamer, H., Bowman, H., Staresina, B., Hanslmayr S. (June, 2017) Data-driven re-referencing of intracranial EEG based on independent component analysis (ICA). **Poster** presentation at *Cutting EEG, 3rd symposium on cutting-edge methods for EEG research*, Glasgow, UK

Michelmann, S., Bowman H., & Hanslmayr, S. (May, 2017). Searching for memory in brain oscillations - investigating the Synchronization/De-Synchronization Conundrum - **Talk** presented at *Memory Replay Workshop* at CUBRIC, Cardiff, UK

Michelmann, S., Griffiths, B.J., Staresina, B.P., Wimber, M., Chelvarajah, R., Rollings, D., Sawlani, V., Hamer, H., Gollwitzer, S., Kreiselmeier, G., Bowman, H., Hanslmayr, S. (November, 2016) The temporal dynamics of human memory replay. **Poster** presentation at the *Annual Meeting of the Society for Neuroscience (SFN)*. San Diego, USA.

Michelmann, S., Bowman H., & Hanslmayr, S. (July, 2016). The temporal signature of dynamic memories. **Talk** presented at *ICOM-6 6th International Conference on Memory*, Budapest, Hungary.