

# Steven Miletić

## CURRICULUM VITAE

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### Employment history and education

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- 2023–present Assistant Professor, Leiden University, Leiden
- 2022–present Postdoctoral researcher, integrative model-based cognitive neuroscience research unit, University of Amsterdam
- 2017–2022 PhD Integrative model-based cognitive neuroscience research unit, University of Amsterdam (*cum laude*)  
Supervisors: Prof. dr. Birte U. Forstmann, Dr. Pierre-Louis Bazin  
Thesis: Modelling structure and function of the human subcortex (pdf)
- 2016–2017 Data Scientist at Odyssey Prime B.V.
- 2014–2016 MSc Brain and Cognitive Sciences (Research), University of Amsterdam (*cum laude*)
- 2010–2014 BSc Bèta-Gamma, major Brain & Cognition, minor Philosophy, University of Amsterdam (*cum laude*)
- 2003–2009 Pre-university education ('gymnasium'), Stedelijk Gymnasium Leiden

### Scientific articles

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\* indicates equal contributions

- Groot, J., **Miletić, S.**, Isherwood, S., Desmond, H. Y., Habli, S., Håberg, A., Forstmann, B., Bazin, P.-L., & Mittner, M. (2023). Echoes from intrinsic connectivity networks in the subcortex. *Journal of Neuroscience*. <https://doi.org/10.1523/JNEUROSCI.1020-23.2023>
- Isherwood, S., Bazin, P.-L., **Miletić, S.**, Stevenson, N., Trutti, A., Tse, D., Heathcote, A., Matzke, D., Innes, R., Habli, S., Sokołowski, D., Alkemade, A., Håberg, A., & Forstmann, B. (2023). Investigating Intra-Individual Networks of Response Inhibition and Interference Resolution using 7T MRI. *NeuroImage*, 271, 119988. <https://doi.org/10.1016/j.neuroimage.2023.119988>
- Miletić\***, S., Bazin\*, P.-L., Isherwood, S. J. S., Keuken, M. C., Alkemade, A., & Forstmann, B. U. (2022). Charting human subcortical maturation across the adult lifespan with in vivo 7 T MRI. *NeuroImage*. <https://doi.org/10.1016/j.neuroimage.2022.118872>
- Miletić, S.**, Keuken, M. C., Mulder, M. J., Trampel, R., De Hollander, G., & Forstmann, B. U. (2022). 7 T functional MRI finds no evidence for distinct functional subregions in the subthalamic nucleus during a speeded decision-making task. *Cortex*, 155, 162–188. <https://doi.org/10.1016/j.cortex.2022.06.014>
- Miletić, S.**, Boag, R. J., Trutti, A. C., Stevenson, N., Forstmann, B. U., & Heathcote, A. (2021). A new model of decision processing in instrumental learning tasks. *eLife*, 10, 1–33. <https://doi.org/10.7554/eLife.63055>
- Van Maanen, L., & **Miletić, S.** (2021). The interpretation of behavior-model correlations in unidentified cognitive models. *Psychonomic Bulletin & Review*. <https://doi.org/10.3758/s13423-020-01783-y>
- Miletić, S.**, Bazin, P.-L., Weiskopf, N., van der Zwaag, W., Forstmann, B. U., & Trampel, R. (2020). fMRI protocol optimization for simultaneously studying small subcortical and cortical areas at 7 T. *NeuroImage*, 219(May). <https://doi.org/10.1016/j.neuroimage.2020.116992>

- Miletić\***, S., Boag\*, R. J., & Forstmann, B. U. (2020). Mutual benefits: Combining reinforcement learning with sequential sampling models. *Neuropsychologia*, *136*, 107261. <https://doi.org/10.1016/j.neuropsychologia.2019.107261>
- Alkemade\*, A., De Hollander\*, G., **Miletić\***, S., Keuken, M. C., Balesar, R., de Boer, O., Swaab, D. F., & Forstmann, B. U. (2019). The functional microscopic neuroanatomy of the human subthalamic nucleus. *Brain Structure and Function*, *224*(9), 3213–3227. <https://doi.org/10.1007/s00429-019-01960-3>
- Miletić**, S., & Van Maanen, L. (2019). Caution in decision-making under time pressure is mediated by timing ability. *Cognitive Psychology*, *110*(January), 16–29. <https://doi.org/10.1016/j.cogpsych.2019.01.002>
- Snoek\*, L., **Miletić\***, S., & Scholte, H. S. (2019). How to control for confounds in decoding analyses of neuroimaging data. *NeuroImage*, *184*(April 2018), 741–760. <https://doi.org/10.1016/j.neuroimage.2018.09.074>
- Turner, B. M., Palestro, J. J., **Miletić**, S., & Forstmann, B. U. (2019). Advances in techniques for imposing reciprocity in brain-behavior relations. *Neuroscience and Biobehavioral Reviews*, *102*(March), 327–336. <https://doi.org/10.1016/j.neubiorev.2019.04.018>
- Van Maanen, L., van der Mijl, R., van Beurden, M. H. P. H., Roijendijk, L. M. M., Kingma, B. R. M., **Miletić**, S., & van Rijn, H. (2019). Core body temperature speeds up temporal processing and choice behavior under deadlines. *Scientific Reports*, *9*(1), 10053. <https://doi.org/10.1038/s41598-019-46073-3>
- Turner, B. M., **Miletić**, S., & Forstmann, B. U. (2018). Outlook on deep neural networks in computational cognitive neuroscience. *NeuroImage*, *180*(September 2017), 117–118. <https://doi.org/10.1016/j.neuroimage.2017.12.078>
- Miletić**, S., Turner, B. M., Forstmann, B. U., & Van Maanen, L. (2017). Parameter recovery for the Leaky Competing Accumulator model. *Journal of Mathematical Psychology*, *76*, 25–50. <https://doi.org/10.1016/j.jmp.2016.12.001>
- Miletić**, S. (2016). Neural Evidence for a Role of Urgency in the Speed-Accuracy Trade-off in Perceptual Decision-Making. *The Journal of Neuroscience*, *36*(22), 5909–5910. <https://doi.org/10.1523/JNEUROSCI.0894-16.2016>

### **Book chapters**

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- Boag, R., **Miletić**, S., & Trutti, A. C. (in press). Toward a model-based cognitive neuroscience of working memory subprocesses. In B. U. Forstmann & B. M. Turner (Eds.), *Introduction to model-based cognitive neurosciences*. Springer.

### **Symposia organization**

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- 2023 Model-based neuroscience summer school, University of Amsterdam, co-organizer. *Amsterdam, the Netherlands*
- 2022 Advances in understanding the neurovascular coupling relationship, session co-chair. *Interpreting BOLD 3, Oxford, England*
- 2022 Model-based neuroscience summer school, University of Amsterdam, co-organizer. *Amsterdam, the Netherlands*
- 2022 An interdisciplinary perspective on the deep brain in health and disease. *Organizer of symposium on subcortical research, Amsterdam, The Netherlands*
- 2021 Mutual benefits: Incorporating learning rules in sequential sampling models. *Symposium organization and scientific committee at the 10th Symposium on the biology of decision making (SBDM), Paris, France (virtual)*
- 2021 Uncovering subcortical function. *Co-organized the workshop "Terra Incognita" at the University of Amsterdam, Amsterdam, The Netherlands (virtual)*

### **Invited presentations**

- 2023 Modelling structure and function of the human subcortex. *Invited presentation under the Stimulating Minds talk series, Einstein Center for the Neurosciences, Charité Universitätsmedizin, Berlin, Germany*
- 2023 Performance of the volatile Kalman filter in the reversal learning paradigm. *Contribution to MathPsych 2023, Amsterdam, the Netherlands*
- 2023 Adaptive evidence accumulation models. *Contribution to the Australasian Mathematical Psychology meeting, Melbourne, Australia*
- 2023 Adaptive evidence accumulation models. *Invited talk at the Department of Psychology, University of Newcastle, Newcastle, Australia*
- 2022 Combined modelling of evidence accumulation models and reinforcement learning. *Contribution to a session at the European Group for Mathematical Psychology (EMPG), Rovereto, Italy*
- 2022 fMRI of the human subcortex: Challenges and opportunities. *Invited talk at the LIBC, Leiden University, Leiden, The Netherlands*
- 2022 fMRI of the human subcortex: Challenges and opportunities. *Contribution to An interdisciplinary perspective on the deep brain in health and disease, Amsterdam, The Netherlands*
- 2021 A new model of decision processes in instrumental learning. *Contribution to a session at the Symposium on the biology of decision making (SBDM), Paris, France (virtual)*
- 2021 A new model of decision processes in instrumental learning. *Contribution to a symposium on mathematical psychology at the University of Amsterdam, Amsterdam, The Netherlands (virtual)*
- 2021 Uncovering subcortical function. *Introduction & session moderator at the workshop "Terra Incognita" at the University of Amsterdam, Amsterdam, The Netherlands (virtual)*
- 2019 Accumulate-to-threshold models for human and animal research. *Netherlands institute for Neuroscience, Amsterdam, The Netherlands*
- 2019 Psychological theory-building from the perspective of sequential sampling models. *International Conference on Psychological Science (ICPS) 2019, Paris, France*

### **Conference contributions, posters, workshops, proceedings**

- Miletić, S.,** Bazin, P.-L., Isherwood, S. J. S., Keuken, M. C., Alkemade, A., & Forstmann, B. U. Charting human subcortical maturation across the adult lifespan with in vivo 7 T MRI. In: Organization for Human Brain Mapping (Glasgow, Scotland, 2022).

- Bazin, P.-L., Alkemade, A., **Miletić, S.**, & Forstmann, B. U. Mapping the mesoscale vasculature with 3D post-mortem histology. In: Organization for Human Brain Mapping (Glasgow, Scotland, 2022).
- Bazin, P.-L., **Miletić, S.**, Alkemade, A., Isherwood, S. J. S., & Forstmann, B. U. The MASSP subcortical probabilistic atlas. In: Organization for Human Brain Mapping (Glasgow, Scotland, 2022).
- Isherwood, S., Bazin, P.-L., **Miletić, S.**, Trutti, A. C., Tse, D. H. Y., Alkemade, A., Habli, S., Goa, P. E., Håberg, A. K., & Forstmann, B. U. Intra-individual Similitude of Response Inhibition and Interference Resolution. In: Interpreting BOLD 3, 2022 (Oxford, England, 2022).
- Isherwood, S., Bazin, P.-L., **Miletić, S.**, Trutti, A. C., Tse, D. H. Y., Alkemade, A., Habli, S., Goa, P. E., Håberg, A. K., & Forstmann, B. U. Intra-individual Similitude of Response Inhibition and Interference Resolution. In: Organization for Human Brain Mapping 2022 (Glasgow, Scotland, 2022).
- Isherwood, S., Bazin, P.-L., **Miletić, S.**, Trutti, A. C., Tse, D. H. Y., Stevenson, N., Alkemade, A., Habli, S., Goa, P. E., Håberg, A. K., & Forstmann, B. U. Comparing Response Inhibition and Interference Resolution using 7 T MRI. In: International Cognitive Neuroscience Conference (ICON) (Helsinki, Finland, 2022).
- Miletić, S.**, Bazin, P.-L., Tse, D. H. Y., Goa, P. E., Habli, S., Isherwood, S. J. S., Trutti, A. C., Håberg, A. K., & Forstmann, B. U. Decision making and reinforcement learning processing in the human subcortex. In: Interpreting BOLD 3, 2022 (Oxford, England, 2022).
- Trutti, A., **Miletić, S.**, Sjoerds, Z., Isherwood, S., Bazin, P.-L., Tse, D., Habli, S., Goa, P., Håberg, A., Hommel, B., & Forstmann, B. Subcortical involvement in working-memory updating processes. In: Organization for Human Brain Mapping (Glasgow, Scotland, 2022).
- Van Wijk, B., Nasrawi, R., **Miletić, S.**, & Forstmann, B. U. Evidence accumulation during perceptual decision-making modulates bottom-up and top-down effective connectivity. In: NVP Winter Conference (Egmond aan Zee, The Netherlands, 2022).
- Boag, R. J., **Miletić, S.**, Mathiopoulou, B., & Forstmann, B. Mutual benefits: Combining reinforcement learning with sequential sampling models. In: Computational Cognitive Neuroscience (Berlin, Germany, 2019).
- Miletić, S.**, Bazin, P.-L., Weiskopf, N., van der Zwaag, W., Forstmann, B. U., & Trampel, R. Comparing single echo and multi echo protocols at 7T for studying cortical and subcortical areas simultaneously. In: Organization for Human Brain Mapping (Rome, Italy, 2019).
- Miletić, S.**, Boag, R. J., Mathiopoulou, B., & Forstmann, B. U. Speed and accuracy of learning: A combined Q-learning diffusion decision model analysis. In: *In Proceedings of the society for computational cognitive neuroscience* (Berlin, Germany, 2019).
- Miletić\***, S., Snoek\*, L., & Scholte, H. S. A universal method to control for confounds in MVPA. In: International Cognitive Neuroscience Conference (ICON) (Amsterdam, The Netherlands, 2017).
- Snoek, L., **Miletić, S.**, & Scholte, H. S. A tutorial on multivoxel pattern analysis of functional MRI data. In: International Cognitive Neuroscience Conference (ICON) (Amsterdam, The Netherlands, 2017).
- Miletić, S.**, Turner, B., Forstmann, B. U., & Van Maanen, L. Fitting the leaky, competing accumulator model. In: NVP Winter Conference (Egmond aan Zee, The Netherlands, 2015).

Van Baardewijk, S., Miletic, S., & Van Maanen, L. Is there evidence for a mixture of two processes in perceptual decision-making? In: NVP Winter Conference (Egmond aan Zee, The Netherlands, 2015).

### **Peer review**

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Ad hoc peer reviewer for *Elife*, *Psychological Review*, *Neuroimage*, *Computational Brain and Behavior*, *Journal of Mathematical Psychology*, *Psychonomic Bulletin and Review*, *PLoS Computational Biology*, *Frontiers in Neuroscience*, *Neurobiology of Aging*.

### **Teaching & Supervision**

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2022–2026 PhD co-supervisor of Ettore Cerracchio  
2017–2022 Supervised Masters' students research projects  
2018–2023 Lecturer in the Model-based neuroscience Summer School, University of Amsterdam  
2019–2022 Lecturer in "Introduction to Neuroscientific methods and anatomy" (Research Master Brain and Cognitive Sciences, University of Amsterdam)  
2022 Lecturer in "Advanced neuroimaging" (Research Master Brain and Cognitive Sciences, University of Amsterdam)  
2017–2019 Lecturer in "Cognitive Modeling and Data Analysis" (Research Master Brain and Cognitive Sciences, University of Amsterdam)  
2018–2019 Guest lecturer in "Neuroimaging: BOLD" (Research Master Psychology, University of Amsterdam)  
2017–2018 Guest lecturer in "Introduction to Neuroscientific methods and anatomy" (Research Master Brain and Cognitive Sciences, University of Amsterdam)  
2017 Workshop cognitive modelling (EPOS Autumn School, Leiden University)  
2017 Teaching Assistant in "Research Methods and Data Analysis" (Bachelor Bèta-Gamma, University of Amsterdam)  
2017 Teaching Assistant in "Statistics for Life Sciences" (Bachelor Bèta-Gamma, University of Amsterdam)  
2016 Teaching Assistant in "Cognitive Modeling and Data Analysis" (Research Master Brain and Cognitive Science, University of Amsterdam)  
2016 Teaching Assistant in "Matlab programming" (Research Master Brain and Cognitive Sciences, University of Amsterdam)

### **Grants**

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2022 ERC Proof of Concept grant (€150k), co-applicant  
2013 'Beta beurs' grant in Amsterdam (€3k), for research equipment for the final project of Bèta-Gamma