

Dr. Benjamin Knopp

Computational Cognitive Scientist

* March 25, 1987

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Married, two children

Skills

ML/AI:	Deep Learning, Generative Models Bayesian statistics, Model Comparison
Programming:	Python, Julia, Javascript, Bash Online Experiments, Virtual Reality
Data:	Motion Capture, Eyetracking, Images and Video

Experience

Professional

- since 2021 **Postdoc**, *Philipps-Universität Marburg*
Eyetracker studies
Deep generative models for face perception
- 2019 **Visiting Researcher**, *Queens University*, Kingston, Canada
Deep neural networks for human pose tracking
- 2017–2021 **Doctoral Candidate**, *Philipps-Universität Marburg*
Psychophysical VR and online experiments
Machine learning models of movement
- 2016–2017 **Scientific Staff**, *Philipps-Universität Marburg*
Psychophysical segmentation of movement
Clustering of movements

Other

- 2006–2007 **Civil Service**, *Troxler Haus*, Wuppertal
Caretaker in a workshop for persons with disabilities

Education

- 2017–2021 **Ph.D. in Psychology**, *Philipps-Universität Marburg*, *Magna cum laude*
Perception of Human Movement Based on Modular Movement Primitives
- 2013–2016 **M.Sc. in Physics**, *Philipps-Universität Marburg*
Differences between head- and gaze-centered image statistics
- 2008–2013 **B.Sc. in Physics**, *TU Dortmund*
Evolution und Zeitrichtung (Evolution and the arrow of time)
- 2006 **Abitur**, *Wilhelm-Dörpfeld-Gymnasium*, Wuppertal

Talks and Posters

- 2022 **Poster**, *Symposium on Applied Perception (SAP)*
online
- 2020 **Talk**, *Symposium on Applied Perception (SAP)*
online
- 2019 **Talk**, *Symposium on Applied Perception (SAP)*
Barcelona
- 2018 **Poster**, *Machine Learning Summer School (MLSS)*
Madrid
- 2018 **Poster**, *Computational Approaches to Cognitive Science (KogWis)*,
Best Poster Award, 3rd place
Darmstadt
- 2018 **Poster**, *Conference of Experimental Psychologists (TeaP)*
Marburg
- 2017 **Poster**, *Symposium on Applied Perception (SAP)*,
Best Poster Award, 1st place
Cottbus
- 2017 **Poster**, *European Conferences of Visual Perception (ECVP)*
Berlin
- 2017 **Poster**, *Winter School: Human Action Control*
Tübingen
- 2016 **Poster**, *Conference on Neural Information Processing Systems (NIPS)*
Barcelona

Publications

Literatur

- [1] Torsten Heinrich, Benjamin Knopp, and Heinrich Päs. Entropy, biological evolution and the psychological arrow of time. *arXiv preprint arXiv:1401.3734*, 2014.
- [2] Benjamin Knopp. Perception of Human Movement Based on Modular Movement Primitives. June 2021.
- [3] Benjamin Knopp, Dmytro Velychko, Johannes Dreibrodt, and Dominik Endres. Predicting perceived naturalness of biological movement based on generative movement primitive models. 2018.
- [4] Benjamin Knopp, Dmytro Velychko, Johannes Dreibrodt, and Dominik Endres. Predicting Perceived Naturalness of Human Animations Based on Generative Movement Primitive Models. *ACM Trans. Appl. Percept.*, 16(3):15:1–15:18, September 2019.
- [5] Benjamin Knopp, Dmytro Velychko, Johannes Dreibrodt, Alexander C. Schütz, and Dominik Endres. Evaluating Perceptual Predictions based on Movement Primitive Models in VR- and Online-Experiments. In *ACM Symposium on Applied Perception 2020*, pages 1–9, Virtual Event USA, September 2020. ACM.

- [6] Dmytro Velychko, Benjamin Knopp, and Dominik Endres. The variational coupled gaussian process dynamical model. In *International Conference on Artificial Neural Networks*, pages 291–299. Springer, 2017.
- [7] Dmytro Velychko, Benjamin Knopp, and Dominik M. Endres. Making the Coupled Gaussian Process Dynamical Model Modular and Scalable with Variational Approximations. *Entropy*, 20(10):724, October 2018.

Languages

German native

English fluent

Spanish basic

Hobbies & Interests

- Music
- Trumpet
 - Bass Guitar
 - Piano

Marburg, 28. Februar 2024

B. Knopp