

BEN LONNQVIST

Head of NeuroAI, Read/Write Labs

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Technical lead in NeuroAI. At Read/Write Labs I lead the NeuroAI team, and I architect the company's generative neuromodulation platform. Research background in large-scale evaluation of AI against human vision and the brain, with multiple first-author papers at top machine-learning venues.

■ EXPERIENCE

- 2026–now **Head of NeuroAI**
Read/Write Labs (formerly Dandelion Science)
- Lead NeuroAI: set the technical direction for how brain models are built, validated and used to design targeted therapies for brain disorders.
 - Architect and lead the development of the company's generative neuromodulation platform.
- 2025–2026 **AI Researcher**
Read/Write Labs (formerly Dandelion Science)
- Built and evaluated maintainable and sustainable computational brain models for the company's therapy-design platform.
 - Led technical platform development.
- 2020–2025 **Doctoral Researcher** Lausanne, Switzerland
EPFL · NeuroAI Lab and Laboratory of Psychophysics
- Led a large-scale comparison of humans and 1,000+ AI models on contour integration (ICML 2025).
 - Core contributor to the open-source Brain-Score platform (github.com/brain-score).
- 2018–2020 **Research Assistant & Intern** Aberdeen, UK
School of Psychology, University of Aberdeen
- Deep-network models of visual crowding (first-author paper in *Neural Networks*); Bayes-optimal eye-movement modelling and eye-tracking studies.

■ EDUCATION

- 2020–2025 **Ph.D., Computational Neuroscience** EPFL, Lausanne
Thesis: *Differences in Visual Perception in Humans and Deep Neural Networks*
Nominated for the Best Thesis Prize
Advisors: Prof. Michael H. Herzog, Prof. Martin Schrimpf · Computer Science and Life Sciences departments
- 2016–2020 **M.A. (Hons), Economics and Finance, First Class** University of Aberdeen
Thesis: *Optimal search in multi-armed bandit problems*

■ PUBLICATIONS

* equal contribution

CONFERENCE PAPERS

- 2026 Mehrer, J., **Lonnqvist, B.**, Mitola, A., Papale, P., Schrimpf, M. Model-guided microstimulation steers primate visual behavior. *International Conference on Learning Representations (ICLR)*.
arXiv:2510.03684
- 2025 **Lonnqvist, B.**, Scialom, E., Gokce, A., Merchant, Z., Herzog, M. H., Schrimpf, M. Contour integration underlies human-like vision. *International Conference on Machine Learning (ICML)*, PMLR 267:40290–40311. proceedings.mlr.press

2024 **Lonnqvist, B.***, Wu, Z.*, Herzog, M. H. Latent noise segmentation: How neural noise leads to the emergence of segmentation and grouping. *International Conference on Machine Learning (ICML)*, PMLR 235. proceedings.mlr.press

JOURNAL ARTICLES

- 2026 Scialom, E., **Lonnqvist, B.**, Bornet, A., Herzog, M. H. Diagnostic features predicted by deep learning improve human object recognition in simulated prosthetic vision. *Journal of Neural Engineering*. doi:10.1088/1741-2552/ae9227
- 2021 **Lonnqvist, B.**, Bornet, A., Doerig, A., Herzog, M. H. A comparative biology approach to DNN modeling of vision: A focus on differences, not similarities. *Journal of Vision*, 21(10):17. doi:10.1167/jov.21.10.17
- 2020 **Lonnqvist, B.**, Clarke, A. D. F., Chakravarthi, R. Crowding in humans is unlike that in convolutional neural networks. *Neural Networks*. doi:10.1016/j.neunet.2020.03.021

PREPRINTS

- 2022 **Lonnqvist, B.**, Machiraju, H., Herzog, M. H. A comment on Guo et al. [arXiv:2206.11228]. *arXiv*. arXiv:2208.01456
- 2020 **Lonnqvist, B.**, Elsner, M., Hunt, A. R., Clarke, A. D. F. Modeling individual variation in visual search with reinforcement learning. *PsyArXiv*. doi:10.31234/osf.io/suj28

■ TALKS & PRESENTATIONS

INVITED TALKS

- 2019–2024 Scene Grammar Lab, Goethe Universität Frankfurt (2024); INCC, Université Paris Cité & CNRS Vision Group Symposium (2023); Psychology & Computer Science, University of Essex (2019).

CONFERENCE ORALS

- 2019–2024 Vision Sciences Society: perceptual grouping with latent noise (2024, main meeting and MODVIS); segmentation in noisy VAEs (2023, MODVIS); global information processing in feedforward networks (2022). Scottish Vision Group: object recognition in CNNs vs. humans (2019).

SELECTED POSTERS

- 2021–2025 ICML 2025 (contour integration); CCN 2024 (integration across object discontinuities); ECVP 2024 (grouping failures in DNNs, joint first author); VSS 2024 (categorical object properties, with Scialom et al.); VSS 2023 (segmentation in noisy VAEs); VSS 2021 (crowding in feedforward CNNs).

■ RECOGNITION & SERVICE

- Press** EPFL News front page (2025) and *20 Minutes*, Switzerland (2025) on contour integration; *Tekniikka&Talous*, Finland (2025), interview on Latent Noise Segmentation.
- Awards** Nominated for the Best Thesis Prize, EPFL; Rank Prize Foundation Optoelectronics Studentship (2019); M.A. with First-Class Honours (2020).
- Reviewing** NeurIPS; CCN; ICML Workshop on LLMs and Cognition; NeurIPS Workshop on Behavioral ML. Journals: *Neural Networks*, *Neural Computation*, *PLOS One*, *Vision Research*.
- Teaching** Teaching assistant, Understanding Statistics (M.Sc.) and Real Analysis (B.Sc.), EPFL 2020–2024. Supervised M.Sc. theses of M. van Holk, M. Ben Salah, C. Lévy-Fidel and Z. Wu, plus eight semester, summer and course projects.