

André Sevenius Nilsen, PhD

Scientist • Writer • Philosopher

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[Google Scholar](#) | [LinkedIn](#) | [Bluesky](#)

Research Interests

Intelligence, consciousness, decision making, the integrated brain, psychology, AI, political and social science, metaphysics, game theory, complexity science, ethics, philosophy of science, physics, futurism, history, simulation and modelling.

Education

- 2026 **Ph.D., Medicine and Health Science**
Institute of Basic Medical Sciences, University of Oslo
Thesis: *Consciousness: When Is It Present And How Would We Know? Testing Measures and Assumptions for Detecting Consciousness Across States and Substrates.*
Supervisors: Prof. J. F. Storm, PhD B. E. Juel, Prof. R. J. Huster.
- 2014 **M.Sc., Cognitive Neuroscience**
Institute of Psychology, University of Oslo
Thesis: *Right Inferior Frontal Gyrus and Motor Response Inhibition: A Real-Time fMRI Neurofeedback Study.*
Grade A. Supervisors: Prof. Tor Endestad & PhD Dag Alnæs.
- 2012 **B.Sc., Informatics, Language, Logic and Psychology**
Institute of Informatics, University of Oslo
Thesis: *The Link Between Numerical Time Estimates and Stored Temporal References.*
Grade A. Supervisor: PhD Torleif Hallkjellsvik.

Employment

- 2025–present **Researcher**
Kongsberg Hospital (PI: M.D. G. Ernst)
Responsible for funding applications and data analysis. Projects include a study on combined ketamine and TMS for depression, and memory formation and awareness during propofol sedation (UiO & Kongsberg Hospital).
- 2016–present **Researcher / PhD Candidate**
University of Oslo, Brain Signalling Group (PI: Prof. J. F. Storm)
PhD candidate from 2020 with supervisors B. E. Juel & J. F. Storm. Thesis defence: March 2026. Responsible for all aspects of the scientific process — study design, data acquisition, analysis, and writing. Projects span behavioural and pharmacological experiments and modelling/simulation of large-scale neural networks. Topics include anaesthesia, sleep, consciousness, psychedelics, and computational modelling of thalamocortical systems. Methods: TMS-EEG, ERP, anaesthesia administration, sleep deprivation, behavioural paradigms.

- 2016 **Researcher**
University of Oslo, Hedonic Pharmacology Lab (PI: Prof. S. Leknes)
 Co-responsible for implementation and analysis; assisted in acquisition. Study on binocular rivalry, salience, and aggression using intranasal oxytocin, eyetracking, and behavioural paradigms.
- 2015–2016 **Researcher**
Innlandet Hospital Trust (PI: Assoc. Prof. T. Endestad)
 Main responsible for MRI, fMRI, and resting-state fMRI analysis, interpretation, manuscript writing and submission. Psychological trauma study using MRI and fMRI.
- 2015–2016 **Scientific Technician**
University of Oslo (Assoc. Prof. R. Huster)
 Assisting in design, scripting, and implementation of multimodal EEG-fMRI neurofeedback. Behavioural inhibition study using real-time fMRI and EEG.
- 2014–2016 **Researcher**
University of Oslo, Hedonic Pharmacology Lab (PI: PhD S. Leknes)
 Consulting on design, scripting, acquisition, and analysis. Craving and reward study using morphine administration, fMRI, rs-fMRI, biometrics, and behavioural paradigms.
- 2014–2016 **Scientific Assistant**
NKVTS / University of Oslo (PI: PhD I. Blix)
 Main responsible for analysis; co-responsible for acquisition, interpretation, manuscript, and submission. Psychological trauma study using MRI, fMRI, rs-fMRI, and psychometrics.
- 2014 **ERP-Technician**
Rikshospitalet (Oslo University Hospital), Prof. S. Andersson
 Responsible for EEG acquisition and ERP analysis for diagnostic purposes.
- 2014 **Researcher**
SafeCom AS (PI: Dr. B. C. Østberg)
 Main responsible for prototyping of medical technologies: medical UWB radar scanner and vibrational diagnostic tool using Matlab and Arduino.
- 2012–2013 **Scientific Assistant**
University of Oslo (PI: PhD I. Blix)
 Co-responsible for fMRI/MRI acquisition including recent traffic accident survivors. Psychological trauma study using MRI, fMRI, rs-fMRI, psychometrics, and behavioural paradigms.
- 2012–2013 **Lab Manager**
Cognitive Laboratories, University of Oslo (Assoc. Prof. T. Endestad)
 Responsible for data acquisition, student lab days, analysis, booking, and IT communication.

Publications

Journal Articles.

- [1] Bajwa, I. J., **Nilsen, A. S.**, . . . , Storm, J. F., & Juel, B. E. (2025). A repeated awakening study exploring the capacity of complexity measures to capture dreaming during propofol sedation. *Scientific Reports*, 15(1).
- [2] Wong, W., . . . , **Nilsen, A. S.**, . . . , & Tsuchiya, N. (2025). A dream EEG and mentation database. *Nature Communications*, 16(1).

- [3] **Sevenius Nilsen, A.**, Storm, J. F., & Juel, B. E. (2024). Does Cognitive Load Affect Measures of Consciousness? *Brain Sciences*, 14(9):919. doi:10.3390/brainsci14090919
- [4] **Sevenius Nilsen, A.**, Arena, A., & Storm, J. F. (2024). Exploring effects of anesthesia on complexity, differentiation, and integrated information in rat EEG. *Neuroscience of Consciousness*, 2024(1):niae021. doi:10.1093/nc/niae021
- [5] Aamodt, A., **Sevenius Nilsen, A.**, Markhus, R., Kusztor, A., HasanzadehMoghadam, F., Kauppi, N., Thüerer, B., Storm, J. F., & Juel, B. E. (2023). EEG Lempel-Ziv complexity varies with sleep stage, but does not seem to track dream experience. *Frontiers in Human Neuroscience*, 16:987714. doi:10.3389/fnhum.2022.987714
- [6] **Sevenius Nilsen, A.**, Juel, B. E., Thüerer, B., Aamodt, A., & Storm, J. F. (2022). Are we really unconscious in ‘unconscious’ states? Common assumptions revisited. *Frontiers in Human Neuroscience*, 16:987051. doi:10.3389/fnhum.2022.987051
- [7] **Nilsen, A. S.**, Juel, B. E., Farnes, N., Romundstad, L., & Storm, J. F. (2021). Behavioral effects of sub-anesthetic ketamine in a go/no-go task. *Journal of Psychedelic Studies*, 4(3), 156–162.
- [8] Halder, S., Juel, B. E., **Sevenius Nilsen, A.**, Raghavan, L. V., & Storm, J. F. (2021). Changes in measures of consciousness during anaesthesia of one hemisphere (Wada test). *NeuroImage*, 226:117566. doi:10.1016/j.neuroimage.2020.117566
- [9] Aamodt, A., **Sevenius Nilsen, A.**, Thüerer, B., HasanzadehMoghadam, F., Kauppi, N., Juel, B. E., & Storm, J. F. (2021). EEG Signal Diversity Varies With Sleep Stage and Aspects of Dream Experience. *Frontiers in Psychology*, 12:655884. doi:10.3389/fpsyg.2021.655884
- [10] Farnes, N., Juel, B. E., **Nilsen, A. S.**, Romundstad, L. G., & Storm, J. F. (2020). Increased signal diversity/complexity of spontaneous EEG, but not evoked EEG responses, in ketamine-induced psychedelic state in humans. *PLOS ONE*, 15(11), e0242056.
- [11] Kusztor, A., Raud, L., Juel, B. E., **Nilsen, A. S.**, Storm, J. F., & Huster, R. J. (2019). Sleep deprivation differentially affects subcomponents of cognitive control. *Sleep*, 42(4), zsz016.
- [12] **Sevenius Nilsen, A.**, Juel, B. E., & Marshall, W. (2019). Evaluating Approximations and Heuristic Measures of Integrated Information. *Entropy*, 21(5):525. doi:10.3390/e21050525
- [13] Wortinger, L. A., Endestad, T., Melinder, A. M. D., Øie, M. G., **Nilsen, A. S.**, & Wyller, V. B. (2016). Aberrant resting-state functional connectivity in the salience network of adolescent chronic fatigue syndrome. *PLOS ONE*, 11(7), e0159351.
- [14] **Nilsen, A. S.**, Blix, I., Leknes, S., Ekeberg, Ø., Skogstad, L., Endestad, T., & Heir, T. (2016). Brain activity in response to trauma-specific, negative, and neutral stimuli: A fMRI study of recent road traffic accident survivors. *Frontiers in Psychology*, 7, 1173.
- [15] **Nilsen, A. S.**, Hilland, E., Kogstad, N., Heir, T., Hauff, E., Lien, L., & Endestad, T. (2016). Right temporal cortical hypertrophy in resilience to trauma: an MRI study. *European Journal of Psychotraumatology*, 7. doi:10.3402/ejpt.v7.31314

Preprints & Working Papers.

- [1] **Sevenius Nilsen, A.** (2026). Newcomb’s Paradox Under Epistemic Uncertainty: A Two-Stage Policy Analysis. *PhilArchive*.

- [2] **Nilsen, A. S.**, Juel, B. E., Thüerer, B., & Storm, J. F. (2020). Proposed EEG measures of consciousness: a systematic, comparative review. *PsyArXiv*.

Theses.

- [1] **Sevenius Nilsen, A.** (2026). *Consciousness: When Is It Present And How Would We Know? Testing Measures and Assumptions for Detecting Consciousness Across States and Substrates*. PhD Thesis, University of Oslo.
- [2] **Nilsen, A. S.** (2014). *Right Inferior Frontal Gyrus and Motor Response Inhibition: A Real-Time fMRI Neurofeedback Study*. MSc Thesis, University of Oslo. hdl.handle.net/10852/39807

Popular Science.

- [1] **Sevenius Nilsen, A.** (2021). Popular science article. *MedisinBloggen*.
- [2] **Sevenius Nilsen, A.** (2012–2014). Three popular science articles. *Speilvendt*, student journal of psychology, University of Oslo.

Talks & Presentations

- 2025 **Invited Talk**
Molecular Medicine Department, University of Oslo, Oslo
- 2023 **Talk & Panel Discussion**
Student Society for Psychedelic Science, University of Oslo, Oslo
- 2023 **Talk**
Molecular Medicine Department, University of Oslo, Oslo
- 2021 **Abstract & Talk**
ConsciousBrainConcepts Annual Workshop, Oslo
- 2021 **Abstract & Talk**
Nordic Graduate Conference on the Philosophy of Mind
- 2019 **Abstract & Poster**
Association for the Scientific Study of Consciousness (ASSC)
- 2018 **Abstract & Poster**
Society for Neuroscience (SfN), San Diego, CA, USA
- 2018 **Abstract & Poster**
Federation of European Neuroscience Societies (FENS), Berlin, Germany
- 2018 **Abstract & Poster**
Association for the Scientific Study of Consciousness (ASSC), Krakow, Poland
- 2018 **Abstract & Poster**
HBP-IC 1st — Understanding Consciousness
- 2017 **Abstract, Poster & Talk**
Human Brain Project 1st Student Conference
- 2017 **Abstract & Poster**
Nordic Neuroscience Meeting

- 2017 **Abstract & Poster**
Society for Neuroscience (SfN), Washington D.C., USA
- 2016 **Abstract & Poster**
Reading Emotions, University of Reading, UK
- 2015 **Abstract & Poster**
Society for Neuroscience (SfN), Chicago, USA

Teaching & Supervision

Teaching. 2021–2024 **PSY4318: Multidisciplinary Studies of Consciousness**
University of Oslo
Course coordinator, syllabus designer, and lecturer.

2018 **MBV-SP100: Advanced Neurobiology**
University of Oslo
Intermittent lecturer.

2013–2014 **PSY1010: Research Methods and Statistics**
University of Oslo
Seminar leader.

Supervision (Main Supervisor). 2024 **MSc, Neuroscience**
Universitat Oldenburg
Sub-anaesthetic ketamine for depression — predictive factors.

2022 **MSc, Cognitive Neuroscience**
University of Oslo
Neurodynamic and experiential effects of sub-anaesthetic ketamine.

2022 **BSc, Neuroscience**
Universitat Oldenburg
Repeated masking and recurrent processing theory of consciousness.

2020 **MSc, Informatics**
University of Oslo
Evolutionary dynamics implemented in a neuromorphic computer.

2019 **MSc, Psychology**
University of Oslo
Gambling and addiction — an exploration of the effect of personality on gambling.

2018 **MSc, Cognitive Neuroscience**
University of Oslo
Semantic and motoric inhibition — same in kind or different in mind.

Supervision (Co-Supervisor). 2020 **MSc, Cognitive Neuroscience**
University of Oslo
Validation of measures of consciousness during propofol anaesthesia.

2019 **MSc, Cognitive Neuroscience**
University of Oslo
Sub-anaesthetic ketamine and EEG-based measures of consciousness.

2019 **MSc, Cognitive Neuroscience**
University of Oslo
Sleep deprivation effect on motoric inhibition.

Also supervised 6 students in short-term internship projects.

Grants & Stipends

- 2025 **Grant for ~2 Post-Doctoral Positions**
Helse Sør-Øst
~\$400k USD. Responsible for writing the application. Project: memory formation and awareness during propofol sedation (UiO & Kongsberg Hospital).
- 2025 **NFFO Stipend — Consciousness Science Textbook**
Norsk faglitterær forfatter- og oversetterforening (NFFO)
~\$30k USD. Stipend for writing an introductory textbook on consciousness science.
- 2013 **NFR Summer Stipend (Master Thesis)**
Norges Forskningsråd (NFR)
~\$2k USD. Main recipient of the Research Council of Norway’s summer stipend.
- 2016– **Co-applicant on Multiple Successful Grants**
Various (with B. E. Juel & J. F. Storm)
Co-applicant on several successful grant applications supporting consciousness research at UiO.

Awards & Honours

- 2025 **3rd Place — Forsker Grand Prix (Local Final)**
Forsker Grand Prix / Forskningsdagene
3rd place in the local final of Norway’s national science communication competition.

Service & Editorial

- Review Editor Frontiers in Neuroscience / Neuroprosthetics (2022–present)
- Guest Assoc. Editor Frontiers in Brain Health and Clinical Neuroscience (2022–present)
- Lead Editor Special Issue: “*Comparing Altered States of Consciousness: Phenomenology, Physiology, and Neural Mechanisms*”, Frontiers in Brain Health and Clinical Neuroscience (2025–2026)
- Ad hoc reviewer:** *Science; Nature; Communications Biology; Human Brain Mapping; NeuroImage; Clinical EEG and Neuroscience; Frontiers in Neuroscience; Frontiers in Integrative Neuroscience; Frontiers in Neurology; Journal of Psychedelic Studies; European Child & Adolescent Psychiatry; Cellular Physiology and Biochemistry; Social Cognitive and Affective Neuroscience.*
- Organizer UiO LifeScience Conference (2021, 2022)
- Organizer ConsciousBrainConcepts Workshop on Consciousness (2021)
- Examiner External examiner, MSc Cognitive Neuroscience, UiO (2016); Oral examiner ×7 (2018, 2021–2025)
- Section Rep. Section Representative for Temporarily Employed, UiO (2019–2021)

Software & Repositories

PyConscious

Python package

EEG-based measures of consciousness (Lempel-Ziv complexity, permutation entropy, integrated information proxies, and more). Used in multiple published studies.

NYP (NEST YAML Platform)

Python/YAML framework

Parametrising and running large-scale thalamocortical neural network simulations in NEST. ~50,000-neuron model of thalamocortical dynamics.

Skills

Programming	Python, Matlab, Bash, L ^A T _E X, E-Basic, Java, C++, Perl, VB
Methods	EEG, fMRI, rs-fMRI, rt-fMRI, MRI, TMS, TMS-EEG, ERP, eyetracking, pupilometry, psychometrics, computational modelling & simulation
Software	FSL, Matlab, NEST, E-prime, Freesurfer, Linux, SPSS, AFNI, Neuroscan
Languages	Norwegian (native), English (fluent)

Additional Courses.	2024 Medical History (HES9320), UiO; Introduction to Statistics (MF9130), U
2022	Introduction to Machine Learning (IN4050), UiO; Neuroscience School of Advanced Studies (NSAS)
2020	Sprint School in Computational Neuroscience, EITN
2019	Multi-Agent Systems (TEK9010), UiO
2017	Computational Neuroscience (FYS488), NMBU
Various	Courses in philosophy, psychology, informatics, statistics, methods, and cognitive neuroscience (UiO)

Other

Private tutoring	Research methods and statistics (2014–2015)
Popular science	1 article in <i>MedisinBloggen</i> (2021); 3 articles in <i>Speilvendt</i> (2012–2014)