

Øystein Sørensen

Associate Professor

Education

- 2011–2015 **PhD in Statistics**, *University of Oslo*, Oslo, Norway.
○ Thesis: Rank and Measurement Error Modeling for Robust Genomic Inference
○ Supervisors: Magne Thoresen and Arnaldo Frigessi
- 2006– 2011 **MsC in Biological Physics**, *Norwegian University of Life Sciences*, Ås, Norway.
○ Thesis: Modeling of Extracellular Potentials Measured by Microelectrode Arrays
○ Thesis supervisor: Gaute Einevoll

Experience

- 2018– **Associate Professor**, *University of Oslo*, Oslo, Norway.
present ○ Tenure-track position at the Center for Lifespan Changes in Brain and Cognition, Department of Psychology.
- 2018–2018 **Postdoctoral Researcher**, *University of Oslo*, Oslo, Norway.
- 2016–2018 **Data Scientist**, *NextBridge Analytics*, Oslo, Norway.
○ Consultant implementing advanced analytics and machine learning solutions for clients across a wide range of sectors.
- 2014–2016 **Analyst/Data Scientist**, *Storebrand Life Insurance*, Oslo, Norway.
○ Developed predictive analytics and data management solutions for the B2B market
- 2011–2014 **PhD Student**, *University of Oslo*, Oslo, Norway.
○ Four-year position with 25 % teaching duties. Finished 6 months ahead of time.

Editorial Boards

- 2021–present **Associate Editor**, *Journal of Open Source Software*.

Grants

- 2022–2026 **Does sleep duration affect the brain? (PI: Anders M Fjell)**, *Leader of work package on statistical modeling*.
○ ES682301, Project number: 325878, Funder: The Research Council of Norway. NOK 12,000,000.

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2020–2024 **Exploring the Causal Effects of Immune Responses to Cognitive and Mental Health - Integrating Large-scale Genomics with Longitudinal Studies (PI: Yunpeng Wang)**, *Leader of work package on longitudinal modeling*.

- o ES659918, Project number: 302854, Funder: FRIPRO Young research talents, The Research Council of Norway. NOK 8,000,000.

Publications

See my Google Scholar profile for further information.

First Author Publications

- 2021 **Sørensen, Øystein; Walhovd, Kristine B.; Fjell, Anders M.**, *A Recipe for Accurate Estimation of Lifespan Brain Trajectories, Distinguishing Longitudinal and Cohort Effects*, *NeuroImage*. <http://doi.org/10.1016/j.neuroimage.2020.117596>.
- 2021 **Sørensen, Øystein; Brandmaier, Andreas M.; Macià, Dídac; Ebmeier, Klaus; Ghisletta, Paolo; Kievit, Rogier A.; Mowinckel, Athanasia M.; Walhovd, Kristine B.; Westerhausen, Rene; Fjell, Anders**, *Meta-Analysis of Generalized Additive Models in Neuroimaging Studies*, *NeuroImage*. <http://doi.org/10.1016/j.neuroimage.2020.117416>.
- 2020 **Sørensen, Øystein; Westerhausen, Rene**, *From Observed Laterality to Latent Hemispheric Differences: Revisiting the Inference Problem*, *Laterality*. <http://doi.org/10.1080/1357650X.2020.1769124>.
- 2020 **Sørensen, Øystein; Crispino, Marta; Liu, Qinghua; Vitelli, Valeria**, *BayesMallows: An R Package for the Bayesian Mallows Model*, *The R Journal*. <http://doi.org/10.32614/RJ-2020-026>.
- 2019 **Sørensen, Øystein**, *Hdme: High-Dimensional Regression with Measurement Error*, *Journal of Open Source Software*. <http://doi.org/10.21105/joss.01404>.
- 2018 **Sørensen, Øystein; Hellton, Kristoffer Herland; Frigessi, Arnaldo; Thoresen, Magne**, *Covariate Selection in High-Dimensional Generalized Linear Models With Measurement Error*, *Journal of Computational and Graphical Statistics*. <http://doi.org/10.1080/10618600.2018.1425626>.
- 2017 **Vitelli, Valeria; Sørensen, Øystein; Crispino, Marta; Frigessi, Arnaldo; Arjas, Elja**, *Probabilistic Preference Learning with the Mallows Rank Model*, *The Journal of Machine Learning Research*.

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 [SorensenOystein](https://twitter.com/SorensenOystein) •  [osorensen](https://orcid.org/0000-0001-9000-0000)

- 2015 Sørensen, Øystein; Frigessi, Arnaldo; Thoresen, Magne, *Measurement Error in Lasso: Impact and Likelihood Bias Correction*, Statistica Sinica. <http://doi.org/ss.2013.180>.

Non First Author Publications

- 2021 Sederevičius, Donatas; Vidal-Piñeiro, Didac; Sørensen, Øystein; van Leemput, Koen; Iglesias, Juan Eugenio; Dalca, Adrian V.; Greve, Douglas N.; Fischl, Bruce; Bjørnerud, Atle; Walhovd, Kristine B.; Fjell, Anders M., *Reliability and Sensitivity of Two Whole-Brain Segmentation Approaches Included in FreeSurfer –ASEG and SAMSEG*, NeuroImage. <http://doi.org/10.1016/j.neuroimage.2021.118113>.
- 2021 Fjell, Anders Martin; Grydeland, Hakon; Wang, Yunpeng; Amlien, Inge K; Bartres-Faz, David; Brandmaier, Andreas M; Düzal, Sandra; Elman, Jeremy; Franz, Carol E; Håberg, Asta K; Kietzmann, Tim C; Kievit, Rogier Andrew; Kremen, William S; Krogsrud, Stine K; Kühn, Simone; Lindenberger, Ulman; Macía, Didac; Mowinckel, Athanasia Monika; Nyberg, Lars; Panizzon, Matthew S; Solé-Padullés, Cristina; Sørensen, Øystein; Westerhausen, Rene; Walhovd, Kristine Beate, *The Genetic Organization of Longitudinal Subcortical Volumetric Change Is Stable throughout the Lifespan*, eLife. <http://doi.org/10.7554/eLife.66466>.
- 2021 Nyberg, Lars; Magnussen, Fredrik; Lundquist, Anders; Baaré, William; Bartrés-Faz, David; Bertram, Lars; Boraxbekk, C. J.; Brandmaier, Andreas M.; Drevon, Christian A.; Ebmeier, Klaus; Ghisletta, Paolo; Henson, Richard N.; Junqué, Carme; Kievit, Rogier; Kleemeyer, Maike; Knights, Ethan; Kühn, Simone; Lindenberger, Ulman; Penninx, Brenda W. J. H.; Pudas, Sara; Sørensen, Øystein; Vaqué-Alcázar, Lúcia; Walhovd, Kristine B.; Fjell, Anders M., *Educational Attainment Does Not Influence Brain Aging*, Proceedings of the National Academy of Sciences. <http://doi.org/10.1073/pnas.2101644118>.
- 2021 Grydeland, Håkon; Sederevičius, Donatas; Wang, Yunpeng; Bartrés-Faz, David; Bertram, Lars; Dobricic, Valerija; Düzal, Sandra; Ebmeier, Klaus P; Lindenberger, Ulman; Nyberg, Lars; Pudas, Sara; Sexton, Claire E; Solé-Padullés, Cristina; Sørensen, Øystein; Walhovd, Kristine B; Fjell, Anders M, *Self-Reported Sleep Relates to Microstructural Hippocampal Decline in β -Amyloid Positive Adults beyond Genetic Risk, Sleep*. <http://doi.org/10.1093/sleep/zsab110>.

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- 2021 Vidal-Pineiro, Didac; Sneve, Markus H; Amlien, Inge K; Grydeland, Håkon; Mowinckel, Athanasia M; Roe, James M; Sørensen, Øystein; Nyberg, Lars H; Walhovd, Kristine B; Fjell, Anders M, *The Functional Foundations of Episodic Memory Remain Stable Throughout the Lifespan*, Cerebral Cortex. <http://doi.org/10.1093/cercor/bhaa348>.
- 2021 Roe, James M.; Vidal-Piñeiro, Didac; Sørensen, Øystein; Brandmaier, Andreas M.; Düzel, Sandra; Gonzalez, Hector A.; Kievit, Rogier A.; Knights, Ethan; Kühn, Simone; Lindenberger, Ulman; Mowinckel, Athanasia M.; Nyberg, Lars; Park, Denise C.; Pudas, Sara; Rundle, Melissa M.; Walhovd, Kristine B.; Fjell, Anders M.; Westerhausen, Rene, *Asymmetric Thinning of the Cerebral Cortex across the Adult Lifespan Is Accelerated in Alzheimer's Disease*, Nature Communications. <http://doi.org/10.1038/s41467-021-21057-y>.
- 2020 Vidal-Pineiro, Didac; Parker, Nadine; Shin, Jean; French, Leon; Grydeland, Håkon; Jackowski, Andrea P.; Mowinckel, Athanasia M.; Patel, Yash; Pausova, Zdenka; Salum, Giovanni; Sørensen, Øystein; Walhovd, Kristine B.; Paus, Tomas; Fjell, Anders M., *Cellular Correlates of Cortical Thinning throughout the Lifespan*, Scientific Reports. <http://doi.org/10.1038/s41598-020-78471-3>.
- 2020 Walhovd, Kristine B.; Bråthen, Anne Cecilie Sjøli; Panizzon, Matthew S.; Mowinckel, Athanasia M.; Sørensen, Øystein; de Lange, Ann-Marie G.; Krogsrud, Stine Kleppe; Håberg, Asta; Franz, Carol E.; Kremen, William S.; Fjell, Anders M., *Within-Session Verbal Learning Slope Is Predictive of Lifespan Delayed Recall, Hippocampal Volume, and Memory Training Benefit, and Is Heritable*, Scientific Reports. <http://doi.org/10.1038/s41598-020-78225-1>.
- 2020 Fjell, Anders M; Sørensen, Øystein; Amlien, Inge K; Bartrés-Faz, David; Brandmaier, Andreas M; Buchmann, Nikolaus; Demuth, Ilja; Drevon, Christian A; Düzel, Sandra; Ebmeier, Klaus P; Ghisletta, Paolo; Idland, Ane-Victoria; Kietzmann, Tim C; Kievit, Rogier A; Kühn, Simone; Lindenberger, Ulman; Magnussen, Fredrik; Macià, Didac; Mowinckel, Athanasia M; Nyberg, Lars; Sexton, Claire E; Solé-Padullés, Cristina; Pudas, Sara; Roe, James M; Sederevicius, Donatas; Suri, Sana; Vidal-Piñeiro, Didac; Wagner, Gerd; Watne, Leiv Otto; Westerhausen, René; Zsoldos, Enikő; Walhovd, Kristine B, *Poor Self-Reported Sleep Is Related to Regional Cortical Thinning in Aging but Not Memory Decline - Results From the Lifebrain Consortium*, Cerebral Cortex. <http://doi.org/10.1093/cercor/bhaa332>.

- 2020 Idland, Ane-Victoria; Sala-Llonch, Roser; Watne, Leiv Otto; Brækhus, Anne; Hansson, Oskar; Blennow, Kaj; Zetterberg, Henrik; Sørensen, Øystein; Walhovd, Kristine Beate; Wyller, Torgeir Bruun; Fjell, Anders Martin, *Biomarker Profiling beyond Amyloid and Tau: Cerebrospinal Fluid Markers, Hippocampal Atrophy, and Memory Change in Cognitively Unimpaired Older Adults*, *Neurobiology of Aging*. <http://doi.org/10.1016/j.neurobiolaging.2020.04.002>.
- 2020 Fjell, Anders M.; Sørensen, Øystein; Amlie, Inge K.; Bartrés-Faz, David; Bros, Didac Macià; Buchmann, Nikolaus; Demuth, Ilja; Drevon, Christian A.; Düzel, Sandra; Ebmeier, Klaus P.; Idland, Ane-Victoria; Kietzmann, Tim C.; Kievit, Rogier; Kühn, Simone; Lindenberger, Ulman; Mowinckel, Athanasia M.; Nyberg, Lars; Price, Darren; Sexton, Claire E.; Solé-Padullés, Cristina; Pudas, Sara; Sederevicius, Donatas; Suri, Sana; Wagner, Gerd; Watne, Leiv Otto; Westerhausen, René; Zsoldos, Enikő; Walhovd, Kristine B., *Self-Reported Sleep Relates to Hippocampal Atrophy across the Adult Lifespan: Results from the Lifebrain Consortium*, *Sleep*. <http://doi.org/10.1093/sleep/zsz280>.
- 2020 Gorbach, Tetiana; Pudas, Sara; Bartrés-Faz, David; Brandmaier, Andreas M.; Düzel, Sandra; Henson, Richard N.; Idland, Ane-Victoria; Lindenberger, Ulman; Bros, Didac Macià; Mowinckel, Athanasia M.; Solé-Padullés, Cristina; Sørensen, Øystein; Walhovd, Kristine B.; Watne, Leiv Otto; Westerhausen, René; Fjell, Anders M.; Nyberg, Lars, *Longitudinal Association between Hippocampus Atrophy and Episodic-Memory Decline in Non-Demented APOE E4 Carriers*, *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring*. <http://doi.org/10.1002/dad2.12110>.
- 2020 Walhovd, Kristine B.; Fjell, Anders M.; Sørensen, Øystein; Mowinckel, Athanasia Monika; Reinhold, Céline Sonja; Idland, Ane-Victoria; Watne, Leiv Otto; Franke, Andre; Dobricic, Valerija; Kilpert, Fabian; Bertram, Lars; Wang, Yunpeng, *Genetic Risk for Alzheimer Disease Predicts Hippocampal Volume through the Human Lifespan*, *Neurology Genetics*. <http://doi.org/10.1212/NXG.0000000000000506>.
- 2019 Fjell, Anders M.; Sneve, Markus H.; Sederevicius, Donatas; Sørensen, Øystein; Krogsrud, Stine K.; Mowinckel, Athanasia M.; Walhovd, Kristine B., *Volumetric and Microstructural Regional Changes of the Hippocampus Underlying Development of Recall Performance after Extended Retention Intervals*, *Developmental Cognitive Neuroscience*. <http://doi.org/10.1016/j.dcn.2019.100723>.

- 2017 Asfaw, Derbachew; Vitelli, Valeria; Sørensen, Øystein; Arjas, Elja; Frigessi, Arnaldo, *Time-Varying Rankings with the Bayesian Mallows Model*, Stat. <http://doi.org/10.1002/sta4.132>.
- 2015 Wyller, Vegard Bruun; Sørensen, Øystein; Sulheim, Dag; Fagermoen, Even; Ueland, Thor; Mollnes, Tom Eirik, *Plasma Cytokine Expression in Adolescent Chronic Fatigue Syndrome*, Brain, Behavior, and Immunity. <http://doi.org/10.1016/j.bbi.2014.12.025>.
- 2015 Asprusten, Tarjei Tørre; Fagermoen, Even; Sulheim, Dag; Skovlund, Eva; Sørensen, Øystein; Mollnes, Tom Eirik; Wyller, Vegard Bruun, *Study Findings Challenge the Content Validity of the Canadian Consensus Criteria for Adolescent Chronic Fatigue Syndrome*, Acta Paediatrica. <http://doi.org/10.1111/apa.12950>.

Preprints

- 2021 Sørensen, Øystein; Fjell, Anders M.; Walhovd, Kristine B., *Longitudinal Modeling of Age-Dependent Latent Traits with Generalized Additive Latent and Mixed Models*, arXiv:2105.02488 [stat].
- 2021 Vidal-Piñeiro, D.; Wang, Y.; Krogstad, Sk; Amlie, Ik; Baaré, Wfc; Bartrés-Faz, D.; Bertram, L.; Brandmaier, A. M.; Drevon, Ca; Düzel, S.; Ebmeier, Kp; Henson, R. N.; Junque, C.; Kievit, R. A.; Kühn, S.; Leonardsen, E.; Lindenberger, U.; Madsen, Ks; Magnussen, F.; Mowinckel, Am; Nyberg, L.; Roe, Jm; Segura, B.; Smith, Sm; Sørensen, Ø; Suri, S.; Westerhausen, R.; Zalesky, A.; Zsoldos, E.; *flagship study of Ageing, the Australian Imaging Biomarkers and Lifestyle; Walhovd, Kb; Fjell, Am, Individual Variations in “Brain Age” Relate to Early Life Factors More than to Longitudinal Brain Change*, bioRxiv. <http://doi.org/10.1101/2021.02.08.428915>.
- 2020 Walhovd, Kristine B.; Fjell, Anders M.; Wang, Yunpeng; Amlie, Inge K.; Mowinckel, Athanasia M.; Lindenberger, Ulman; Düzel, Sandra; Bartrés-Faz, David; Ebmeier, Klaus P.; Drevon, Christian A.; Baaré, William; Ghisletta, Paolo; Johansen, Louise Barué; Kievit, Rogier A.; Henson, Richard N.; Madsen, Kathrine Skak; Nyberg, Lars; Harris, Jennifer; Solé-Padullés, Cristina; Pudas, Sara; Sørensen, Øystein; Westerhausen, René; Zsoldos, Enikő; Nawijn, Laura; Lynstad, Torkild Hovde; Suri, Sana; Penninx, Brenda; Røgeberg, Ole J.; Brandmaier, Andreas M., *Education and Income Show Heterogeneous Relationships to Lifespan Brain and Cognitive Differences across European and US Cohorts*, bioRxiv. <http://doi.org/10.1101/2020.10.12.335687>.

Software

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See my *GitHub* for a complete overview of my software both released and in development.

- 2021 **cellmigRation: Track Cells, Analyze Cell Trajectories and Compute Migration Statistics**, Ghannoum S, Fantini D, Leoncio W, and Sørensen Ø, <https://bioconductor.org/packages/cellmigRation/>.
 - o Contributor
- 2020 **metagam: Meta-Analysis of Generalized Additive Models**, Sørensen Ø., Brandmaier AM, and Mowinckel AM, <https://cran.r-project.org/package=metagam>.
 - o Author and maintainer
- 2020 **BayesianLaterality: Predict Brain Asymmetry Based on Handedness and Dichotic Listening**, Sørensen Ø., <https://cran.r-project.org/package=BayesianLaterality>.
 - o Author and maintainer
- 2018 **hdme: High-Dimensional Regression with Measurement Error**, Sørensen Ø, <https://cran.r-project.org/package=hdme>.
 - o Author and maintainer
- 2018 **BayesMallows: Bayesian Preference Learning with the Mallows Rank Model**, Sørensen Ø et al., <https://cran.r-project.org/package=BayesMallows>.
 - o Author and maintainer

Teaching


- 2011-2014 **Teaching while doing PhD**, *University of Oslo*, Oslo, Norway.
 - o Statistics for medical students (MED1100)
 - o Introductory statistics for medical researchers (MF9130)
- 2008-2010 **Teaching assistant**, *Norwegian University of Life Sciences*, Ås, Norway.
 - o Waves, optics, theory of relativity and gravitation (FYS113)
 - o Electromagnetism (FYS135)
 - o Quantum physics (FYS145)
 - o MATLAB for engineering students
 - o Linear algebra and linear differential equations (MATH113)
 - o Math preparation course for new students (MATH007)

Courses and Workshops Organized

- 2017 **R courses**, *NextBridge Analytics*, Oslo, Norway.
 - o Two-day open course in machine learning with R
 - o One-day and two-day courses in data science with R for large industry clients
- 2011 **Statistics course**, *Nordland County*, Bodø, Norway.
 - o Taught a one-day statistics course for upper secondary math teachers
- 2011 **Statistics course**, *Tekna, Norwegian Society of Graduate Technical and Scientific Professionals*, Ås, Norway.
 - o One-day exam preparation course for engineering students

Presentations at Peer-Reviewed International Conferences

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- 2021 **Generalized additive latent and mixed models**, *NORDSTAT2021*, Tromsø, Norway (Online).
 - Slides: <https://osorensen.github.io/NORDSTAT2021/presentation.html>
- 2021 **Longitudinal modeling of age-dependent latent traits with generalized additive latent and mixed models**, *Nordic-Baltic Biometrics Conference*, Helsinki, Finland (Online).
 - Slides: <https://osorensen.github.io/NordicBalticBiometrics2021/presentation.html>
- 2020 **Flexible Meta-Analysis of Generalized Additive Models with metagam**, *European R User Meeting*, Milan, Italy (Online).
 - Slides: <https://osorensen.github.io/ERUM2020/metagam/metagam.html>
- 2020 **Analyzing Preference Data with the BayesMallows Package**, *European R User Meeting*, Milan, Italy (Online).
 - Slides: <https://osorensen.github.io/ERUM2020/BayesMallows/presentation.html>
- 2019 **On Computing Age Trajectories of Brain Volumes Using Additive Mixed Models**, *Organization for Human Brain Mapping Annual Meeting*, Rome, Italy.
 - Poster presentation.
- 2014 **Bayesian inference for the Mallows rank model**, *NORDSTAT2014*, Turku, Finland.
 - Contributed talk.
- 2013 **Generalized Matrix Uncertainty Selector**, *Workshop on Statistical Methods for Post-Genomic Data*, Amsterdam, Netherlands.
 - Contributed talk.
- 2012 **Variable Selection by Lasso in Regression with Measurement Error**, *Annual conference of the International Society for Clinical Biostatistics*, Bergen, Norway.
 - Contributed talk.
- 2012 **Variable Selection by Lasso in Regression with Measurement Error**, *World Congress of Probability and Statistics*, Istanbul, Turkey.
 - Contributed talk.
- 2012 **Impact of Measurement Error in Lasso**, *NSF Workshop for High-Dimensional Data*, Yale University, New Haven, United States.
 - Poster presentation.

Research Communication and Other Presentations

- 2019 **Mild introduction to Rcpp: what you need to know about C++ as R user**, *Oslo userR! Group*, Oslo, Norway.
 - Slides: <https://osorensen.github.io/user-rcpp-2019/presentation.html>
- 2017 **Customer Lifetime Value**, *Annual meeting of the Norwegian Computer Society, section for Business Intelligence*, Oslo, Norway.
 - This presentation was awarded as the 'Best lightning talk'
- 2017 **Analyzing customer lifetime value**, *Oslo data science meetup*, Oslo, Norway.
 - 45-minute invited presentation

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- 2017 **Modeling of customer lifetime value, and how to use it**, *SAS User Forum*, Oslo, Norway.
- o 30-minute invited presentation

Service

14th International Conference of the ERCIM WG on Computational and Methodological Statistics 2021.

- o Organizer of session 'Statistical innovations in research on human brain and cognition'

European R User Meeting 2020.

- o Assisting with Q&A in two parallel sessions

Abel Symposium 2014 on Statistical analysis for high-dimensional data.

- o Member of Local Organizing Committee

Manuscript Reviews.

- o Cerebral Cortex
- o Entropy
- o IEEE Access
- o International Journal of Computer Mathematics
- o Journal of Machine Learning Research
- o Journal of the American Statistical Association
- o Journal of Open Source Software (4)
- o NeuroImage (2)
- o PLoS One
- o Scientific Reports
- o Social Cognitive and Affective Neuroscience
- o Statistics in Medicine

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