Mikael Novén

Ph. D. in Neurolinguistics

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EMPLOYMENT

Postdoc Current
I am currently working within the ReScale-project to investigate how cortical motor networks and their plasticity change with age. I use magnetic resonance imaging and dynamic graph theory to investigate the structure and dynamics of the brain's functional and structural networks.

Doctoral student in Neurolinguistics 2016-01-01 - 2021-03-05
Successfully defended my dissertation in neurolinguistics 2021-03-05. In my research projects I used neuroimaging techniques to find neuroanatomical correlates of perceptual phonological proficiency and language learning aptitude. I learned theories and practical experiments regarding phonetics, phonology, language learning aptitude and an additional range of cognitive and linguistic domains. I also gained skills in ultra-high field (7T) MRI and EEG as well as linguistics, neuroscience and experiment design.

Research assistant 2015-08-15 - 2015-12-31
Research assistant in the neurolinguistics group at the Centre for Languages and Literature, Lund University. I mainly worked on analysing MRI and EEG data.

Head of Educational Affairs - The Student Union at Faculty of Engineering, Lund University 2011-06-30 - 2012-06-30
Full-time employed as Vice President. During one year I was head of educational affairs and represented 8000 students in all issues concerning the education on the faculty of engineering. This also included having part in the responsibility of leading the union.

PUBLICATIONS

Olsson H, Novén M, Lätt J, Wirestam R, Helms G. Radiofrequency Bias Correction of Magnetization Prepared Rapid Gradient Echo MRI at 7.0 Tesla Using an External Reference in a Sequential Protocol. Tomography. 2021; 7(3):434-451. https://doi.org/10.3390/tomography7030038

Novén, M., Olsson, H., Helms, G., Horne, M., Nilsson, M., & Roll, M. (2021). Cortical and white matter correlates of language-learning aptitudes. Human Brain Mapping, 1– 14. https://doi.org/10.1002/hbm.25598

Novén, M. (2021). Brain anatomical correlates of perceptual phonological proficiency and language learning aptitude. (PhD Doctoral dissertation), Lund University, Lund. https://portal.research.lu.se/portal/files/90795674/Mikael_Noven_HELA.pdf

Novén, M., Schremm, A., Horne, M., & Roll, M. (2021). Cortical thickness and surface area of left anterior temporal areas affects processing of phonological cues to morphosyntax. Brain Research, 1750, 147150. doi:https://doi.org/10.1016/j.brainres.2020.147150

Novén, M., Schremm, A., Nilsson, M., Horne, M., & Roll, M. (2019). Cortical thickness of Broca's area and right homologue is related to grammar learning aptitude and pitch discrimination proficiency. Brain and Language, 188, 42-47. doi:https://doi.org/10.1016/j.bandl.2018.12.002

Lampinen, B., Szczepankiewicz, F., Novén, M., van Westen, D., Hansson, O., Englund, E., . . . Nilsson, M. (2019). Searching for the neurite density with diffusion MRI: Challenges for biophysical modeling. Human Brain Mapping, 40(8), 2529-2545. doi:https://doi.org/10.1002/hbm.24542

Schremm, A., Novén, M., Horne, M., & Roll, M. (2019). Brain responses to morphologically complex verbs: An electrophysiological study of Swedish regular and irregular past tense forms. Journal of Neurolinguistics, 51, 76-83. doi:https://doi.org/10.1016/j.jneuroling.2019.01.006

Schremm, A., Novén, M., Horne, M., Söderström, P., van Westen, D., & Roll, M. (2018). Cortical thickness of planum temporale and pars opercularis in native language tone processing. Brain and Language, 176, 42-47. doi:https://doi.org/10.1016/j.bandl.2017.12.001

Lekebjer, C., Arvidsson, V., Hildebrand, Ä., Lindqvist, A., Linné, T., Novén, M., & Pobiega, J. (2015). Normkritisk pedagogik : samtal om normer och förändringsmöjligheter i högre utbildning. Artikel presenterad vid Lunds universitets utvecklingskonferens, 2015, Lund, Sverige.

RECEIVED GRANTS

Co-applicant on a successful research project application to Marcus and Amalia Wallenberg Foundation (MAW 2018.0021) titled "The cortical hierarchy of native phonological proficiency". 5 million SEK was granted for the project.

CONFERENCES ATTENDED

Cognitive Neuroscience Society Digital event 2020
Presented a poster titled "Learning Swedish Predictive Tones Correlates with Grey and White Matter Reorganization".

Organization for Human Brain Mapping Vancouver, Canada 2017
Presented a poster titled "Cortical Thickness of Planum Temporale (PT) Influences Word Tone Processing in Swedish Native Speakers".

Cognitive Neuroscience Society San Francisco, U.S.A. 2017
Presented a poster titled "The influence of the cortical thickness of Planum Temporale on word tone processing in Swedish native speakers".

Society for the Neurobiology of Language London, U.K. 2016
Presented a poster titled "Cortical thickness of Planum Temporale in native language tone processing".

EDUCATION

Doctoral studies in Neurolinguistics 2016-01-01 - 2021-03-05
See above under "Employment".

M. Sc. in Engineering - Engineering Nanoscience 2008-2015
Broad engineering programme covering both semiconductor physics, human physiology and cell biology as well as material science. Master thesis concerned diffusion-weighted nuclear magnetic resonance methods development in liquid crystal systems.

TEACHING EXPERIENCE

Co-supervision of Claudia Sjöström, doctoral student in neurolinguistics
On-going from spring 2021
Lecturer in the research course "Functional and Structural Brain Imaging" given as a co-ordinated course between the Humanities Lab and Lund University Bioimaging Centre at Lund University
Spring 2021

Lecturer in the Master's level course "ALSM21 Language and the brain" given at the Centre for Languages and Literature, Lund University
Autumn 2016
Autumn 2018
Teaching assistant in the programming introductory course (Java) given at the Engineering Faculty, Lund University
Autumn 2009
Spring 2010

COMPUTER SKILLS

Very high skills in neuroimaging software suits such as FSL, FreeSurfer, MRtrix, and NiPype. Also very high skills in shell scripting, python, LaTeX, R, and Matlab. Moderate skill in R Markdown, Java, and C++. I have formatted and uploaded a BIDS dataset https://openneuro.org/datasets/ds003508.
I also hold a certificate of achievement from the Philips Pulse Programming Course for MRI scanners.

DEPARTMENTAL/UNIVERSITY SERVICE

Autumn 2017
Doctoral student representative in the faculty board of the joint faculties of humanities and theology and its working committee
Autumn 2015 - Spring 2017
Doctoral student representative in the research programmes board at Lund University
Autumn 2013 - Spring 2014
Student representative in the board of Lund University
Autumn 2012 - Spring 2014
Student representative in the board of the engineering faculty at Lund University

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SCIENCE OUTREACH

"Forskarturné" a tour to three libraries in the south of Sweden giving a talk titled "Kan man se vad man tänker?" on the autumn of 2019 together with Prof. Johan Mauritsson and Ph.D. Karin Markenroth-Bloch.

Planned and hosted a neurolinguistic interactive station on the public event "Kulturnatten" in Lund in the autumns of 2016, 2017, 2018, and 2019.

"Kan man fånga en tanke? Eller i alla fall väga den?" popular scientific article about fMRI in "Fysikaktuellt", published by "Svenska Fysikersamfundet" (Swedish Society of Physicists) June 2017
http://www.fysikersamfundet.se/wp-content/uploads/Fysikaktuellt_nr2-17.pdf