

### **Neurofunctional plasticity in fraction learning: An fMRI training study**

Wortha, S. M., Bloechle, J., Ninaus, M., Kiili, K., Lindstedt, A., Bahnmueller, J., Moeller, K. & Klein, E., 1 Dec 2020, In : Trends in Neuroscience and Education. 21, 15 p., 100141.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Assessment of PIV performance in validating CFD models from nasal cavity CBCT scans**

Ormiskangas, J., Valtonen, O., Kivekäs, I., Dean, M., Poe, D., Järnstedt, J., Lekkala, J., Harju, T., Saarenrinne, P. & Rautiainen, M., 1 Nov 2020, In : Respiratory Physiology and Neurobiology. 282, 9 p., 103508.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Automatic assessment of the myoclonus severity from videos recorded according to standardized Unified Myoclonus Rating Scale protocol and using human pose and body movement analysis**

Hyppönen, J., Hakala, A., Annala, K., Zhang, H., Peltola, J., Mervaala, E. & Kälviäinen, R., 1 Mar 2020, In : Seizure. 76, p. 72-78 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **A Computational Model of Interactions Between Neuronal and Astrocytic Networks: The Role of Astrocytes in the Stability of the Neuronal Firing Rate**

Lenk, K., Satuvuori, E., Lallouette, J., Ladrón-de-Guevara, A., Berry, H. & Hyttinen, J. A. K., 22 Jan 2020, In : Frontiers in Computational Neuroscience. 13, 19 p., 92.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Tidal breathing flow profiles during sleep in wheezing children measured by impedance pneumography**

Gracia-Tabuenca, J., Seppä, V-P., Jauhiainen, M., Paassilta, M., Viik, J. & Karjalainen, J., 2020, In : Respiratory Physiology and Neurobiology. 271, 103312.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Randomized Multiresolution Scanning in Focal and Fast E/MEG Sensing of Brain Activity with a Variable Depth**

Rezaei, A., Koulouri, A. & Pursiainen, S., 2020, In : Brain Topography. 33, 2, p. 161-175 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Membrane-Dependent Binding and Entry Mechanism of Dopamine into Its Receptor**

Lolicato, F., Juhola, H., Zak, A., Postila, P. A., Saukko, A., Rissanen, S., Enkavi, G., Vattulainen, I., Kepczynski, M. & Róg, T., 2020, In : ACS Chemical Neuroscience. 11, 13, p. 1914–1924 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Unique Features of Network Bursts Emerge From the Complex Interplay of Excitatory and Inhibitory Receptors in Rat Neocortical Networks**

Teppola, H., Aćimović, J. & Linne, M. L., 6 Sep 2019, In : FRONTIERS IN CELLULAR NEUROSCIENCE. 13, 377.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Viability of Mouse Retinal Explant Cultures Assessed by Preservation of Functionality and Morphology**

Alarautalahti, V., Ragauskas, S., Hakkarainen, J. J., Uusitalo-Järvinen, H., Uusitalo, H., Hyttinen, J., Kalesnykas, G. & Nymark, S., 1 May 2019, In : Investigative ophthalmology & visual science. 60, 6, p. 1914-1927 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Reduced level of docosahexaenoic acid shifts GPCR neuroreceptors to less ordered membrane regions**

Javanainen, M., Enkavi, G., Guixà-González, R., Kulig, W., Martínez-Seara, H., Levental, I. & Vattulainen, I., 1 May 2019, In : PLoS Computational Biology. 15, 5, e1007033.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Improved EEG source localization with Bayesian uncertainty modelling of unknown skull conductivity**

Rimpiläinen, V., Koulouri, A., Lucka, F., Kaipio, J. P. & Wolters, C. H., 1 Mar 2019, In : NeuroImage. 188, p. 252-260 9 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Diffusion tensor imaging and disability progression in multiple sclerosis: A 4-year follow-up study**

Kolasa, M., Hakulinen, U., Brander, A., Hagman, S., Dastidar, P., Elovaara, I. & Sumelahti, M-L., Jan 2019, In : Brain and Behavior. 9, 1, e01194.

Research output: Contribution to journal › Article › Scientific › peer-review

### **A realistic, accurate and fast source modeling approach for the EEG forward problem**

Miinalainen, T., Rezaei, A., Us, D., Nüßing, A., Engwer, C., Wolters, C. H. & Pursiainen, S., 2019, In : NeuroImage. 184, 1, p. 56-67 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Astrocyte lineage cells are essential for functional neuronal differentiation and synapse maturation in human iPSC-derived neural networks**

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Research output: Contribution to journal › Article › Scientific › peer-review

### **Teaching semantics and skills for human-robot collaboration**

Angleraud, A., Houbre, Q. & Pieters, R., 2019, In : Paladyn. 10, 1, p. 318-329 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Overview of Sources and Characteristics of Nanoparticles in Urban Traffic-Influenced Areas**

Rönkkö, T. & Timonen, H., 2019, In : Journal of Alzheimer's Disease. 72, 1, p. 15-28 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Zeffiro User Interface for Electromagnetic Brain Imaging: a GPU Accelerated FEM Tool for Forward and Inverse Computations in Matlab**

He, Q., Rezaei, A. & Pursiainen, S., 2019, In : Neuroinformatics. 14 p.

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### **Cognitive load and metacognitive confidence extraction from pupillary response**

Gavas, R. D., Tripathy, S. R., Chatterjee, D. & Sinha, A., 1 Dec 2018, In : Cognitive Systems Research. 52, p. 325-334 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Assessment of mutation probabilities of KRAS G12 missense mutants and their long-timescale dynamics by atomistic molecular simulations and Markov state modeling**

Pantsar, T., Rissanen, S., Dauch, D., Laitinen, T., Vattulainen, I. & Poso, A., 10 Sep 2018, In : PLoS Computational Biology. 14, 9, e1006458.

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### **Improving efficiency in convolutional neural networks with multilinear filters**

Tran, D. T., Iosifidis, A. & Gabbouj, M., 1 Sep 2018, In : Neural Networks. 105, p. 328-339 12 p.

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### **Negatively Charged Gangliosides Promote Membrane Association of Amphipathic Neurotransmitters**

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Research output: Contribution to journal › Article › Scientific › peer-review

### **Epileptiform and periodic EEG activities induced by rapid sevoflurane anaesthesia induction**

Sonkajärvi, E., Rytty, S., Alahuhta, S., Suominen, K., Kumpulainen, T., Ohtonen, P., Karvonen, E. & Jäntti, V., 1 Mar 2018, In : Clinical Neurophysiology. 129, 3, p. 638-645 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Nonlinear recurrent neural networks for finite-time solution of general time-varying linear matrix equations**

Xiao, L., Liao, B., Li, S. & Chen, K., Feb 2018, In : Neural Networks. 98, p. 102-113 12 p.

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**A Primal Neural Network for Online Equality-Constrained Quadratic Programming**

Chen, K. & Zhang, Z., 2018, In : Cognitive Computation. 10, 2, p. 381–388 8 p.

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**Meas a novel metric for measuring the intelligence of a swarm of cooperating agents**

Iantovics, L. B., Emmert-Streib, F. & Arik, S., 1 Oct 2017, In : Cognitive Systems Research. 45, p. 17-29 13 p.

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**Concerted regulation of npc2 binding to endosomal/lysosomal membranes by bis(monoacylglycero)phosphate and sphingomyelin**

Enkavi, G., Mikkolainen, H., GÜngör, B., Ikonen, E. & Vattulainen, I., 1 Oct 2017, In : PLoS Computational Biology. 13, 10, e1005831.

Research output: Contribution to journal > Article > Scientific > peer-review

**Inhibition of A $\beta$  Amyloid Growth and Toxicity by Silybins: The Crucial Role of Stereochemistry**

Sciaccia, M. F. M., Romanucci, V., Zarrelli, A., Monaco, I., Lolicato, F., Spinella, N., Galati, C., Grasso, G., D'Urso, L., Romeo, M., Diomedea, L., Salmona, M., Bongiorno, C., Di Fabio, G., La Rosa, C. & Milardi, D., 16 Aug 2017, In : ACS Chemical Neuroscience. 8, 8, p. 1767-1778 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

**Measures of spike train synchrony for data with multiple time scales**

Satuvuori, E., Mulansky, M., Bozanic, N., Malvestio, I., Zeldenrust, F., Lenk, K. & Kreuz, T., 1 Aug 2017, In : Journal of Neuroscience Methods. 287, p. 25-38 14 p.

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**Atomistic fingerprint of hyaluronan-CD44 binding**

Vuorio, J., Vattulainen, I. & Martinez-Seara, H., 1 Jul 2017, In : PLoS Computational Biology. 13, 7, e1005663.

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**Calcium Assists Dopamine Release by Preventing Aggregation on the Inner Leaflet of Presynaptic Vesicles**

Mokkila, S., Postila, P. A., Rissanen, S., Juhola, H., Vattulainen, I. & Róg, T., 21 Jun 2017, In : ACS Chemical Neuroscience. 8, 6, p. 1242-1250 9 p.

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**CNN-based edge filtering for object proposals**

Waris, M. A., Iosifidis, A. & Gabbouj, M., 2 Jun 2017, In : Neurocomputing. 266, p. 631-640

Research output: Contribution to journal > Article > Scientific > peer-review

**Network-wide adaptive burst detection depicts neuronal activity with improved accuracy**

Välkki, I. A., Lenk, K., Mikkonen, J. E., Kapucu, F. E. & Hyttinen, J. A. K., 31 May 2017, In : Frontiers in Computational Neuroscience. 11, 40.

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**Functional brain segmentation using inter-subject correlation in fMRI**

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**Cell culture chamber with gas supply for prolonged recording of human neuronal cells on microelectrode array**

Kreutzer, J., Ylä-Outinen, L., Mäki, A., Ristola, M., Narkilahti, S. & Kallio, P., 15 Mar 2017, In : Journal of Neuroscience Methods. 280, p. 27-35 9 p.

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**Predicting symptom severity in autism spectrum disorder based on cortical thickness measures in agglomerative data**

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### **Spinal cord injury induces widespread chronic changes in cerebral white matter**

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### **Advanced boundary electrode modeling for tES and parallel tES/EEG**

Pursiainen, S., Agsten, B., Wagner, S. & Wolters, C. H., 2017, In : IEEE Transactions on Neural Systems and Rehabilitation Engineering. 26, 1, p. 37-44

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### **The relationship between recognition memory for emotion-laden words and white matter microstructure in normal older individuals**

Saarela, C., Karrasch, M., Ilvesmäki, T., Parkkola, R., Rinne, J. O. & Laine, M., 1 Nov 2016, In : NeuroReport. 27, 18, p. 1345-1349 5 p.

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### **Effect of rhodopsin phosphorylation on dark adaptation in mouse rods**

Berry, J., Frederiksen, R., Yao, Y., Nymark, S., Chen, J. & Cornwall, C., 29 Jun 2016, In : Journal of Neuroscience. 36, 26, p. 6973-6987 15 p.

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### **Morphological Differentiation Towards Neuronal Phenotype of SH-SY5Y Neuroblastoma Cells by Estradiol, Retinoic Acid and Cholesterol**

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### **Comparison of Feature Selection Techniques in Machine Learning for Anatomical Brain MRI in Dementia**

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### **How Many Is Enough? Effect of Sample Size in Inter-Subject Correlation Analysis of fMRI**

Pajula, J. & Tohka, J., 2016, In : Computational Intelligence and Neuroscience. 2016, 2094601.

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### **One-Class Classification based on Extreme Learning and Geometric Class Information**

Iosifidis, A., Mygdalis, V., Tefas, A. & Pitas, I., 2016, In : Neural Processing Letters. p. 1-16 16 p.

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### **Severe cerebral white matter lesions in ischemic stroke patients are associated with less time spent at home and early institutionalization**

Sibolt, G., Curtze, S., Melkas, S., Pohjasvaara, T., Kaste, M., Karhunen, P. J., Oksala, N. K. J. & Erkinjuntti, T., 1 Dec 2015, In : INTERNATIONAL JOURNAL OF STROKE. 10, 8, p. 1192-1196 5 p.

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### **Eustachian tube mucosal inflammation scale validation based on digital video images**

Kivekäs, I., Pöyhönen, L., Aarnisalo, A., Rautiainen, M. & Poe, D., 1 Dec 2015, In : OTOLOGY AND NEUROTOLOGY. 36, 10, p. 1748-1752 5 p.

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### **Elevated levels of soluble CD26 and CD30 in multiple sclerosis**

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**Human anterior thalamic nuclei are involved in emotion-attention interaction**

Sun, L., Peräkylä, J., Polvivaara, M., Öhman, J., Peltola, J., Lehtimäki, K., Huhtala, H. & Hartikainen, K. M., 1 Nov 2015, In : NEUROPSYCHOLOGIA. 78, p. 88-94 7 p.

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**Building new computational models to support health behavior change and maintenance: new opportunities in behavioral research**

Spruijt-Metz, D., Hekler, E., Saranummi, N., Intille, S., Korhonen, I., Nilsen, W., Rivera, D. E., Spring, B., Michie, S., Asch, D. A., Sanna, A., Salcedo, V. T., Kukakfa, R. & Pavel, M., 17 Sep 2015, In : Translational Behavioral Medicine. 5, 3, p. 335-346 12 p.

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**DropELM: Fast neural network regularization with Dropout and DropConnect**

Iosifidis, A., Tefas, A. & Pitas, I., 25 Aug 2015, In : Neurocomputing. 162, p. 57-66 10 p.

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**Distance-based human action recognition using optimized class representations**

Iosifidis, A., Tefas, A. & Pitas, I., 5 Aug 2015, In : Neurocomputing. 161, p. 47-55 9 p.

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**Evaluation of the different sleep-disordered breathing patterns of the compressed tracheal sound**

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**X-ray microtomographic confirmation of the reliability of CBCT in identifying the scalar location of cochlear implant electrode after round window insertion**

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**Association between soluble L-selectin and anti-JCV antibodies in natalizumab-treated relapsing-remitting MS patients**

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**The effects of neuron morphology on graph theoretic measures of network connectivity: The analysis of a two-level statistical model**

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**Experiments of the sonification of the sleep electroencephalogram**

Franco, P. & Värrä, A., 11 May 2015, In : Finnish Journal of eHealth and eWelfare. 7, 2-3, p. 65-74 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

**Standardized evaluation of algorithms for computer-aided diagnosis of dementia based on structural MRI: The CADDementia challenge**

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**Podocyte apoptosis is prevented by blocking the Toll-like receptor pathway**

Saurus, P., Kuusela, S., Lehtonen, E., Hyvönen, M. E., Ristola, M., Fogarty, C. L., Tienari, J., Lassenius, M. I., Forsblom, C., Lehto, M., Saleem, M. A., Groop, P. H., Holthöfer, H. & Lehtonen, S., 1 May 2015, In : CELL DEATH AND DISEASE. 6, 5, e1752.

Research output: Contribution to journal > Article > Scientific > peer-review

**Analysis of apoptosis-related genes in patients with clinically isolated syndrome and their association with conversion to multiple sclerosis**

Hagman, S., Kolasa, M., Basnyat, P., Helminen, M., Kähönen, M., Dastidar, P., Lehtimäki, T. & Elovaara, I., 15 Mar 2015, In : JOURNAL OF NEUROIMMUNOLOGY. 280, p. 43-48 6 p.

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**Extreme learning machine based supervised subspace learning**

Iosifidis, A., 2015, In : Neurocomputing. 167, p. 158-164 7 p.

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**Patient-specific induced pluripotent stem cell—derived RPE cells: Understanding the pathogenesis of retinopathy in long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency**

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Research output: Contribution to journal > Article > Scientific > peer-review

**Effects of cytokine activation and oxidative stress on the function of the human embryonic stem cell—derived retinal pigment epithelial cells**

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**Defining the anterior nucleus of the thalamus (ANT) as a deep brain stimulation target in refractory epilepsy: Delineation using 3 T MRI and intraoperative microelectrode recording**

Möttönen, T., Katisko, J., Haapasalo, J., Tähtinen, T., Kiekara, T., Kähärä, V., Peltola, J., Öhman, J. & Lehtimäki, K., 2015, In : NeuroImage: Clinical. 7, p. 823-829 7 p.

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**Regularized extreme learning machine for multi-view semi-supervised action recognition**

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**Autoimmunity-related immunological serum markers and survival in a tertiary care cohort of adult patients with epilepsy**

Nevalainen, O., Auvinen, A., Ansakorpi, H., Raitanen, J. & Isojärvi, J., 1 Nov 2014, In : EPILEPSY RESEARCH. 108, 9, p. 1675-1679 5 p.

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**Immediate effects of deep brain stimulation of anterior thalamic nuclei on executive functions and emotion-attention interaction in humans**

Hartikainen, K. M., Sun, L., Polvivaara, M., Brause, M., Lehtimäki, K., Haapasalo, J., Möttönen, T., Väyrynen, K., Ogawa, K. H., Öhman, J. & Peltola, J., 28 May 2014, In : JOURNAL OF CLINICAL AND EXPERIMENTAL NEUROPSYCHOLOGY. 36, 5, p. 540-550 11 p.

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**Comparison of stapedotomy minus prosthesis, circumferential stapes mobilization, and small fenestra stapedotomy for stapes fixation**

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### **Origins and functional consequences of somatic mitochondrial DNA mutations in human cancer**

Ju, Y. S. E., Alexandrov, L. B., Gerstung, M., Martincorena, I., Nik-Zainal, S., Ramakrishna, M., Davies, H. R., Papaemmanuil, E., Gundem, G., Shlien, A., Bolli, N., Behjati, S., Tarpey, P. S., Nangalia, J., Massie, C. E., Butler, A. P., Teague, J. W., Vassiliou, G. S., Green, A. R., Du, M. Q., Unnikrishnan, A., Pimanda, J. E., Teh, B. T. E., Munshi, N., Greaves, M., Vyas, P., El-Naggar, A. K., Santarius, T., Collins, V. P., Grundy, R., Taylor, J. A., Hayes, D. N., Malkin, D., Foster, C. S., Warren, A. Y., Whitaker, H. C., Brewer, D., Eeles, R., Cooper, C., Neal, D., Visakorpi, T., Isaacs, W. B., Bova, G. S., Flanagan, A. M., Futreal, P. A., Lynch, A. G., Chinnery, P. F., McDermott, U., Stratton, M. R. & Campbell, P. J., 2014, In : eLIFE. 3

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### **Learning sparse representations for view-independent human action recognition based on fuzzy distances**

Iosifidis, A., Tefas, A. & Pitas, I., 9 Dec 2013, In : Neurocomputing. 121, p. 344-353 10 p.

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### **Post-stroke depression and depression-executive dysfunction syndrome are associated with recurrence of ischaemic stroke**

Sibolt, G., Curtze, S., Melkas, S., Pohjasvaara, T., Kaste, M., Karhunen, P. J., Oksala, N. K. J., Vataja, R. & Erkinjuntti, T., Dec 2013, In : CEREBROVASCULAR DISEASES. 36, 5-6, p. 336-343 8 p.

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### **Effects of exogenous alpha-synuclein on stimulated dopamine overflow in dorsal striatum**

Pelkonen, A., Kallunki, P. & Yavich, L., 25 Oct 2013, In : Neuroscience Letters. 554, p. 141-145 5 p.

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### **Transfer learning using a nonparametric sparse topic model**

Faisal, A., Gillberg, J., Leen, G. & Peltonen, J., 18 Jul 2013, In : Neurocomputing. 112, p. 124-137 14 p.

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### **Mismatch negativity abnormality in traumatic brain injury without macroscopic lesions on conventional MRI**

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### **Fluorescent probes as a tool for cell population tracking in spontaneously active neural networks derived from human pluripotent stem cells**

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