

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

A constrained HMM-based approach to the estimation of perceptual switching dynamics in pigeons

Otterpohl, J. R., Emmert-Streib, F. & Pawelzik, K., Jun 2001, In : *Neurocomputing*. 38-40, p. 1495-1501 7 p.

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

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

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

Advances in Human Stem Cell-Derived Neuronal Cell Culturing and Analysis

Ylä-Outinen, L., Tanskanen, J. M. A., Kapucu, F. E., Hyysalo, A., Hyttinen, J. A. K. & Narkilahti, S., 2019, *In Vitro Neuronal Networks: From Culturing Methods to Neuro-Technological Applications*. Springer New York LLC, p. 299-329 31 p. (Advances in Neurobiology; vol. 22).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › 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.

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

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.

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

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.

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

Assessment of respiratory effort during sleep with noninvasive techniques

Tenhunen, M., Hasan, J. & Himanen, S. L., 1 Dec 2015, In : *Sleep Medicine Reviews*. 24, p. 103-104 2 p.

Research output: Contribution to journal › Article › Scientific

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

Basnyat, P., Hagman, S., Kolasa, M., Koivisto, K., Verkkoniemi-Ahola, A., Airas, L. & Elovaara, I., 1 Jul 2015, In : *Multiple Sclerosis and Related Disorders*. 4, 4, p. 334-338 5 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

Atomistic fingerprint of hyaluronan-CD44 binding

Vuorio, J., Vattulainen, I. & Martinez-Seara, H., 1 Jul 2017, In : *PLoS Computational Biology*. 13, 7, e1005663.
Research output: Contribution to journal › Article › Scientific › peer-review

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.

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

Automatic objective thresholding to detect neuronal action potentials

Tanskanen, J. M. A., Kapucu, F. E., Välikki, I. & Hyttinen, J. A. K., 29 Aug 2016, *Proceedings of 2016 24th European Signal Processing Conference (EUSIPCO)*. p. 662-666 5 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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

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

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.

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

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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CNN-based edge filtering for object proposals

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

Comparison of eye movement filters used in HCI

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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

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

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Computational modeling of growth in cortical cultures using the NETMORPH simulation tool

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Computational study of structural changes in neuronal networks during growth: a model of dissociated neocortical cultures

Acimovic, J., Mäki-Marttunen, T. & Linne, M-L., 2011, *Twentieth Annual Computational Neuroscience Meeting: CNS*2011*. Fellous, J-M. & Prinz, A. (eds.). Stockholm: BioMed Central, Vol. 12 (Suppl 1). p. P203 1 p. P203. (Annual Computational Neuroscience Meeting CNS; vol. 12).

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

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

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

Cortical spreading depression in alpha-synuclein knockout mice

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

Cost-effectiveness of decompressive craniectomy in non-traumatic neurological emergencies

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

COX-2 regulates the proliferation of glioma stem like cells

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

Data-driven study of synchronous population activity in generic spiking neuronal networks: How much do we capture using the minimal model for the considered phenomena?

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Research output: Other conference contribution > Paper, poster or abstract > Scientific

Data-driven study of synchronous population activity in generic spiking neuronal networks: How much do we capture using the minimal model for the considered phenomena?

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Research output: Contribution to journal > Meeting Abstract > Scientific > peer-review

Deep audio-visual saliency: Baseline model and data

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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

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

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

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

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Disease-associated inflammatory biomarker profiles in blood in different subtypes of multiple sclerosis: Prospective clinical and MRI follow-up study

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

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

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Elevated levels of soluble CD26 and CD30 in multiple sclerosis

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

Emergence of global and local structural features during development of neuronal networks

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

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

Erratum: Extracting the dynamics of perceptual switching from 'noisy' behaviour: An application of hidden Markov modelling to pecking data from pigeons (Journal of Physiology Paris (2000) 94:5-6 (555-567) PII: S0928425700010950)

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

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

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Extensive white matter changes predict stroke recurrence up to 5 years after a first-ever ischemic stroke

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Extracting the dynamics of perceptual switching from 'noisy' behaviour: An application of hidden Markov modelling to pecking data from pigeons

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

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

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

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

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

From in silico astrocyte cell models to neuron-astrocyte network models: A review

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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

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Human anterior thalamic nuclei are involved in emotion-attention interaction

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Human-robot interactive learning architecture using ontologies and symbol manipulation

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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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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.

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Research output: Contribution to journal › Meeting Abstract › Scientific › peer-review

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Influence of the experimental design of gene expression studies on the inference of gene regulatory networks: Environmental factors

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

Influence of the neural network topology on the learning dynamics

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

Inhibition of A β Amyloid Growth and Toxicity by Silybins: The Crucial Role of Stereochemistry

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Inhibition of Casein kinase-2 induces p53-dependent cell cycle arrest and sensitizes glioblastoma cells to tumor necrosis factor (TNF α)-induced apoptosis through SIRT1 inhibition

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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

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

Look and lean: Accurate head-assisted eye pointing

Špakov, O., Isokoski, P. & Majaranta, P., 2014, *Proceedings of the Symposium on Eye Tracking Research and Applications, ETRA 2014*. Association for Computing Machinery, p. 35-42 8 p.
Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › 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.
Research output: Contribution to journal › Article › Scientific › peer-review

Melatonin pathway genes are associated with progressive subtypes and disability status in multiple sclerosis among Finnish patients

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

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

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Mesopic background lights enhance dark-adapted cone ERG flash responses in the intact mouse retina: A possible role for gap junctional decoupling

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

MetriIntMeas 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.

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

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

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

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

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

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

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Research output: Other conference contribution › Paper, poster or abstract › Scientific

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.

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Neuroprotective effect of RO-20-1724-a phosphodiesterase4 inhibitor against intracerebroventricular streptozotocin induced cognitive deficit and oxidative stress in rats

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On the effect of network structure and synaptic mechanisms on sustained bursting activity

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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

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

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

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

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

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

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

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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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