Israel Nelken

List of Publications by Year
in descending order

123 papers	10,630 citations	38742 50 h-index	37204 96 g-index
129 all docs	129 docs citations	129 times ranked	7317 citing authors

#	Article	IF	Citations
1	Extrinsic rewards, intrinsic rewards, and non-optimal behavior. Journal of Computational Neuroscience, 2022, 50, 139-143.	1.0	4
2	Context-Dependent Inhibitory Control of Stimulus-Specific Adaptation. Journal of Neuroscience, 2022, 42, 4629-4651.	3.6	19
3	Context-Dependent Processing in Auditory Cortex. , 2022, , 979-981.		0
4	Emergence of abstract sound representations in the ascending auditory system. Progress in Neurobiology, 2021, 202, 102049.	5.7	14
5	Context Sensitivity across Multiple Time scales with a Flexible Frequency Bandwidth. Cerebral Cortex, 2021, 32, 158-175.	2.9	6
6	From neurons to behavior: the view from auditory cortex. Current Opinion in Physiology, 2020, 18, 37-41.	1.8	5
7	Single-neuron representation of learned complex sounds in the auditory cortex. Nature Communications, 2020, 11, 4361.	12.8	29
8	Synaptic Recruitment Enhances Gap Termination Responses in Auditory Cortex. Cerebral Cortex, 2020, 30, 4465-4480.	2.9	9
9	Stimulus-specific adaptation to behaviorally-relevant sounds in awake rats. PLoS ONE, 2020, 15, e0221541.	2.5	12
10	Value-complexity tradeoff explains mouse navigational learning. PLoS Computational Biology, 2020, 16, e1008497.	3.2	5
11	Information Processing in the Auditory System. , 2020, , 41-52.		0
12	Context-Dependent Processing in Auditory Cortex. , 2020, , 1-3.		0
13	Value-complexity tradeoff explains mouse navigational learning. , 2020, 16, e1008497.		0
14	Value-complexity tradeoff explains mouse navigational learning. , 2020, 16, e1008497.		0
15	Value-complexity tradeoff explains mouse navigational learning. , 2020, 16, e1008497.		0
16	Value-complexity tradeoff explains mouse navigational learning. , 2020, 16, e1008497.		0
17	Value-complexity tradeoff explains mouse navigational learning. , 2020, 16, e1008497.		0
18	Value-complexity tradeoff explains mouse navigational learning. , 2020, 16, e1008497.		0

#	Article	IF	Citations
19	Multiple Timescales Account for Adaptive Responses across Sensory Cortices. Journal of Neuroscience, 2019, 39, 10019-10033.	3.6	31
20	Evidence for Linear but Not Helical Automatic Representation of Pitch in the Human Auditory System. Journal of Cognitive Neuroscience, 2019, 31, 669-685.	2.3	9
21	Filters: When, Why, and How (Not) to Use Them. Neuron, 2019, 102, 280-293.	8.1	166
22	InÂVivo Functional Mapping of a Cortical Column at Single-Neuron Resolution. Cell Reports, 2019, 27, 1319-1326.e5.	6.4	43
23	Tau impairs neural circuits, dominating amyloid-Î² effects, in Alzheimer models in vivo. Nature Neuroscience, 2019, 22, 57-64.	14.8	278
24	Blocking c-Fos Expression Reveals the Role of Auditory Cortex Plasticity in Sound Frequency Discrimination Learning. Cerebral Cortex, 2018, 28, 1645-1655.	2.9	29
25	Acoustic recordings data from an echoic environment and a toolkit for its analysis. Data in Brief, 2018, 21, 1451-1457.	1.0	2
26	Deviance sensitivity in the auditory cortex of freely moving rats. PLoS ONE, 2018, 13, e0197678.	2.5	32
27	Acoustic calibration in an echoic environment. Journal of Neuroscience Methods, 2018, 309, 60-70.	2.5	2
28	The Claustrum Supports Resilience to Distraction. Current Biology, 2018, 28, 2752-2762.e7.	3.9	105
29	Primary Auditory Cortex is Required for Anticipatory Motor Response. Cerebral Cortex, 2017, 27, 3254-3271.	2.9	53
30	BACE inhibition-dependent repair of Alzheimerâ€™s pathophysiology. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 8631-8636.	7.1	93
31	Stimulus-specific adaptation in a recurrent network model of primary auditory cortex. PLoS Computational Biology, 2017, 13, e1005437.	3.2	60
32	The Representation of Interaural Time Differences in High-Frequency Auditory Cortex. Cerebral Cortex, 2016, 26, bhu230.	2.9	5
33	Early indices of deviance detection in humans and animal models. Biological Psychology, 2016, 116, 23-27.	2.2	43
34	Detection of Tones Masked by Fluctuating Noise in Rat Auditory Cortex. Cerebral Cortex, 2016, 27, 5130-5143.	2.9	6
35	Early multisensory integration of self and source motion in the auditory system. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8308-8313.	7.1	20
36	The Representation of Prediction Error in Auditory Cortex. PLoS Computational Biology, 2016, 12, e1005058.	3.2	68

#	Article	IF	Citations
37	Rescue of long-range circuit dysfunction in Alzheimer's disease models. Nature Neuroscience, 2015, 18, 1623-1630.	14.8	179
38	Detecting the unexpected. Current Opinion in Neurobiology, 2015, 35, 142-147.	4.2	79
39	Interplay between population firing stability and single neuron dynamics in hippocampal networks. ELife, 2015, 4, .	6.0	95
40	Across-ear stimulus-specific adaptation in the auditory cortex. Frontiers in Neural Circuits, 2014, 8, 89.	2.8	7
41	Using Tweedie distributions for fitting spike count data. Journal of Neuroscience Methods, 2014, 225, 13-28.	2.5	12
42	The Neural Code That Makes Us Human. Science, 2014, 343, 978-979.	12.6	11
43	Stimulus-specific adaptation and deviance detection in the auditory system: experiments and models. Biological Cybernetics, 2014, 108, 655-663.	1.3	134
44	Single neuron and population coding of natural sounds in auditory cortex. Current Opinion in Neurobiology, 2014, 24, 103-110.	4.2	62
45	Auditory Cortical Processing in Real-World Listening: The Auditory System Going Real. Journal of Neuroscience, 2014, 34, 15135-15138.	3.6	19
46	Local versus global scales of organization in auditory cortex. Trends in Neurosciences, 2014, 37, 502-510.	8.6	105
47	Intracellular Correlates of Stimulus-Specific Adaptation. Journal of Neuroscience, 2014, 34, 3303-3319.	3.6	66
48	Frequency Tuning in the Behaving Mouse: Different Bandwidths for Discrimination and Generalization. PLoS ONE, 2014, 9, e91676.	2.5	59
49	Elevated Correlations in Neuronal Ensembles of Mouse Auditory Cortex Following Parturition. Journal of Neuroscience, 2013, 33, 12851-12861.	3.6	40
50	Stimulus-Specific Adaptation Beyond Pure Tones. Advances in Experimental Medicine and Biology, 2013, 787, 411-418.	1.6	27
51	An ear for statistics. Nature Neuroscience, 2013, 16, 381-382.	14.8	16
52	The neuro-pianist. Frontiers in Systems Neuroscience, 2013, 7, 35.	2.5	6
53	Context-Dependent Processing in Auditory Cortex. , 2013, , 1-3.		0
54	Auditory abstraction from spectro-temporal features to coding auditory entities. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 18968-18973.	7.1	43

#	Article	IF	Citations
55	Sensitivity to Complex Statistical Regularities in Rat Auditory Cortex. Neuron, 2012, 76, 603-615.	8.1	141
56	Soundâ€evoked network calcium transients in mouse auditory cortex <i>in vivo</i>. Journal of Physiology, 2012, 590, 899-918.	2.9	60
57	Predictive information processing in the brain: The neural perspective. International Journal of Psychophysiology, 2012, 83, 253-255.	1.0	14
58	Frequency discrimination and stimulus deviance in the inferior colliculus and cochlear nucleus. Frontiers in Neural Circuits, 2012, 6, 119.	2.8	62
59	First Spike Latency Code for Interaural Phase Difference Discrimination in the Guinea Pig Inferior Colliculus. Journal of Neuroscience, 2011, 31, 9192-9204.	3.6	33
60	Functional mapping of single spines in cortical neurons in vivo. Nature, 2011, 475, 501-505.	27.8	360
61	Music and the Auditory Brain: Where is the Connection?. Frontiers in Human Neuroscience, 2011, 5, 106.	2.0	5
62	Stimulus-Specific Adaptation and Deviance Detection in the Rat Auditory Cortex. PLoS ONE, 2011, 6, e23369.	2.5	209
63	Processing Strategies in Auditory Cortex: Comparison with Other Sensory Modalities. , 2011, , 643-656.		2
64	Stimulus uncertainty and perceptual learning: Similar principles govern auditory and visual learning. Vision Research, 2010, 50, 391-401.	1.4	28
65	Functional organization and population dynamics in the mouse primary auditory cortex. Nature Neuroscience, 2010, 13, 353-360.	14.8	327
66	Neural correlates of binaural masking level difference in the inferior colliculus of the barn owl (<i>Tyto alba</i>). European Journal of Neuroscience, 2010, 32, 606-618.	2.6	10
67	Stimulus-Specific Adaptation in the Auditory Thalamus of the Anesthetized Rat. PLoS ONE, 2010, 5, e14071.	2.5	215
68	Auditory Neuroscience. , 2010, , .		70
69	Reverse hierarchies and sensory learning. Philosophical Transactions of the Royal Society B: Biological Sciences, 2009, 364, 285-299.	4.0	240
70	Unraveling the principles of auditory cortical processing: can we learn from the visual system?. Nature Neuroscience, 2009, 12, 698-701.	14.8	145
71	Modeling the auditory scene: predictive regularity representations and perceptual objects. Trends in Cognitive Sciences, 2009, 13, 532-540.	7.8	474
72	Response to Letter: Melloni etÂal., â€œTransient Induced Gamma-Band Response in EEG as a Manifestation ofÂMiniature Saccades.â€•Neuron 58, 429â€"441. Neuron, 2009, 62, 10-12.	8.1	9

#	Article	IF	Citations
73	Inhibitory Plasticity in Auditory Cortex. Neuron, 2009, 62, 605-607.	8.1	2
74	Responses of neurons in the inferior colliculus to binaural disparities: Insights from the use of Fisher information and mutual information. Journal of Neuroscience Methods, 2008, 169, 391-404.	2.5	14
75	Ultra-fine frequency tuning revealed in single neurons of human auditory cortex. Nature, 2008, 451, 197-201.	27.8	157
76	Transient Induced Gamma-Band Response in EEG as a Manifestation of Miniature Saccades. Neuron, 2008, 58, 429-441.	8.1	690
77	Processing of complex sounds in the auditory system. Current Opinion in Neurobiology, 2008, 18, 413-417.	4.2	88
78	Functional Gradients of Auditory Sensitivity along the Anterior Ectosylvian Sulcus of the Cat. Journal of Neuroscience, 2008, 28, 3657-3667.	3.6	23
79	Low-Level Information and High-Level Perception: The Case of Speech in Noise. PLoS Biology, 2008, 6, e126.	5.6	96
80	Responses of Auditory Cortex to Complex Stimuli: Functional Organization Revealed Using Intrinsic Optical Signals. Journal of Neurophysiology, 2008, 99, 1928-1941.	1.8	60
81	Encoding by Response Duration in the Basal Ganglia. Journal of Neurophysiology, 2008, 100, 3244-3252.	1.8	7
82	Neurons and objects: the case of auditory cortex. Frontiers in Neuroscience, 2008, 2, 107-114.	2.8	62
83	Physiological and Anatomical Evidence for Multisensory Interactions in Auditory Cortex. Cerebral Cortex, 2007, 17, 2172-2189.	2.9	317
84	Information theory in auditory research. Hearing Research, 2007, 229, 94-105.	2.0	53
85	Processing of sounds by population spikes in a model of primary auditory cortex. Frontiers in Neuroscience, 2007, 1, 197-209.	2.8	49
86	The effects of background noise on the neural responses to natural sounds in cat primary auditory cortex. Frontiers in Computational Neuroscience, 2007, 1, 3.	2.1	54
87	Mismatch Negativity and Stimulus-Specific Adaptation in Animal Models. Journal of Psychophysiology, 2007, 21, 214-223.	0.7	187
88	Responses of Neurons in Primary Auditory Cortex (A1) to Pure Tones in the Halothane-Anesthetized Cat. Journal of Neurophysiology, 2006, 95, 3756-3769.	1.8	85
89	Reduction of Information Redundancy in the Ascending Auditory Pathway. Neuron, 2006, 51, 359-368.	8.1	226
90	Encoding Stimulus Information by Spike Numbers and Mean Response Time in Primary Auditory Cortex. Journal of Computational Neuroscience, 2005, 19, 199-221.	1.0	130

#	Article	IF	Citations
91	Transformation of stimulus representations in the ascending auditory system. , 2005, , 264-273.		1
92	Functional Organization of Ferret Auditory Cortex. Cerebral Cortex, 2005, 15, 1637-1653.	2.9	189
93	Representation of Tone in Fluctuating Maskers in the Ascending Auditory System. Journal of Neuroscience, 2005, 25, 1503-1513.	3.6	84
94	Multiple Time Scales of Adaptation in Auditory Cortex Neurons. Journal of Neuroscience, 2004, 24, 10440-10453.	3.6	635
95	Processing of complex stimuli and natural scenes in the auditory cortex. Current Opinion in Neurobiology, 2004, 14, 474-480.	4.2	207
96	Cortical processing of complex sound: a way forward?. Trends in Neurosciences, 2004, 27, 181-185.	8.6	65
97	Large-Scale Organization of Ferret Auditory Cortex Revealed Using Continuous Acquisition of Intrinsic Optical Signals. Journal of Neurophysiology, 2004, 92, 2574-2588.	1.8	73
98	Primary auditory cortex of cats: feature detection or something else?. Biological Cybernetics, 2003, 89, 397-406.	1.3	124
99	Processing of low-probability sounds by cortical neurons. Nature Neuroscience, 2003, 6, 391-398.	14.8	906
100	Neural Model for Physiological Responses to Frequency and Amplitude Transitions Uncovers Topographical Order in the Auditory Cortex. Journal of Neurophysiology, 2003, 90, 3663-3678.	1.8	37
101	Responses of Neurons in Cat Primary Auditory Cortex to Bird Chirps: Effects of Temporal and Spectral Context. Journal of Neuroscience, 2002, 22, 8619-8632.	3.6	115
102	Auditory Processing Deficits in Reading Disabled Adults. , 2002, 3, 302-320.		125
103	Feature Detection by the Auditory Cortex. Springer Handbook of Auditory Research, 2002, , 358-416.	0.7	12
104	Relating cluster and population responses to natural sounds and tonal stimuli in cat primary auditory cortex. Hearing Research, 2001, 152, 110-127.	2.0	35
105	Auditory Edge Detection: A Neural Model for Physiological and Psychoacoustical Responses to Amplitude Transients. Journal of Neurophysiology, 2001, 85, 2303-2323.	1.8	98
106	Sound-Localization Experiments with Barn Owls in Virtual Space: Influence of Interaural Time Difference on Head-Turning Behavior. , 2001, 2, 1-21.		51
107	Synthesizing spatially complex sound in virtual space: an accurate offline algorithm. Journal of Neuroscience Methods, 2001, 106, 29-38.	2.5	10
108	Recurrence Methods in the Analysis of Learning Processes. Neural Computation, 2001, 13, 1839-1861.	2.2	0

#	Article	IF	Citations
109	Responses to linear and logarithmic frequency-modulated sweeps in ferret primary auditory cortex. European Journal of Neuroscience, 2000, 12, 549-562.	2.6	112
110	Auditory localization using direction-dependent spectral information. Neurocomputing, 2000, 32-33, 767-773.	5.9	5
111	Spectral Integration by Type II Interneurons in Dorsal Cochlear Nucleus. Journal of Neurophysiology, 1999, 82, 648-663.	1.8	61
112	Responses of auditory-cortex neurons to structural features of natural sounds. Nature, 1999, 397, 154-157.	27.8	303
113	Physiology of MPTP Tremor. Movement Disorders, 1998, 13, 29-34.	3.9	71
114	Linear and Nonlinear Spectral Integration in Type IV Neurons of the Dorsal Cochlear Nucleus. I. Regions of Linear Interaction. Journal of Neurophysiology, 1997, 78, 790-799.	1.8	26
115	Linear and Nonlinear Spectral Integration in Type IV Neurons of the Dorsal Cochlear Nucleus. II. Predicting Responses With the Use of Nonlinear Models. Journal of Neurophysiology, 1997, 78, 800-811.	1.8	54
116	WHY DO CATS NEED A DORSAL COCHLEAR NUCLEUS?. Journal of Basic and Clinical Physiology and Pharmacology, 1996, 7, 199-220.	1.3	29
117	Somatosensory effects on neurons in dorsal cochlear nucleus. Journal of Neurophysiology, 1995, 73, 743-765.	1.8	193
118	â€˜Dynamics of neuronal interactionsâ€™ cannot be explained by â€˜neuronal transientsâ€™. Proceedings of the Royal Society B: Biological Sciences, 1995, 261, 407-410.	2.6	13
119	Population responses to multifrequency sounds in the cat auditory cortex: Four-tone complexes. Hearing Research, 1994, 72, 223-236.	2.0	32
120	Population responses to multifrequency sounds in the cat auditory cortex: One- and two-parameter families of sounds. Hearing Research, 1994, 72, 206-222.	2.0	82
121	In search of the best stimulus: An optimization procedure for finding efficient stimuli in the cat auditory cortex. Hearing Research, 1994, 72, 237-253.	2.0	44
122	DYNAMICS OF COHERENCE IN CORTICAL NEURAL ACTIVITY: EXPERIMENTAL OBSERVATIONS AND FUNCTIONAL INTERPRETATIONS. International Journal of Neural Systems, 1992, 03, 105-114.	5.2	0
123	Analysis of the activity of single neurons in stochastic settings. Biological Cybernetics, 1988, 59, 201-215.	1.3	17