

# Israel Nelken

## List of Publications by Year in descending order

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123  
papers

10,630  
citations

38720

50  
h-index

37183

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.	0.6	4
2	Context-Dependent Inhibitory Control of Stimulus-Specific Adaptation. Journal of Neuroscience, 2022, 42, 4629-4651.	1.7	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.	2.8	14
5	Context Sensitivity across Multiple Time scales with a Flexible Frequency Bandwidth. Cerebral Cortex, 2021, 32, 158-175.	1.6	6
6	From neurons to behavior: the view from auditory cortex. Current Opinion in Physiology, 2020, 18, 37-41.	0.9	5
7	Single-neuron representation of learned complex sounds in the auditory cortex. Nature Communications, 2020, 11, 4361.	5.8	29
8	Synaptic Recruitment Enhances Gap Termination Responses in Auditory Cortex. Cerebral Cortex, 2020, 30, 4465-4480.	1.6	9
9	Stimulus-specific adaptation to behaviorally-relevant sounds in awake rats. PLoS ONE, 2020, 15, e0221541.	1.1	12
10	Value-complexity tradeoff explains mouse navigational learning. PLoS Computational Biology, 2020, 16, e1008497.	1.5	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

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19	Multiple Timescales Account for Adaptive Responses across Sensory Cortices. <i>Journal of Neuroscience</i> , 2019, 39, 10019-10033.	1.7	31
20	Evidence for Linear but Not Helical Automatic Representation of Pitch in the Human Auditory System. <i>Journal of Cognitive Neuroscience</i> , 2019, 31, 669-685.	1.1	9
21	Filters: When, Why, and How (Not) to Use Them. <i>Neuron</i> , 2019, 102, 280-293.	3.8	166
22	InÂVivo Functional Mapping of a Cortical Column at Single-Neuron Resolution. <i>Cell Reports</i> , 2019, 27, 1319-1326.e5.	2.9	43
23	Tau impairs neural circuits, dominating amyloid-Î² effects, in Alzheimer models in vivo. <i>Nature Neuroscience</i> , 2019, 22, 57-64.	7.1	278
24	Blocking c-Fos Expression Reveals the Role of Auditory Cortex Plasticity in Sound Frequency Discrimination Learning. <i>Cerebral Cortex</i> , 2018, 28, 1645-1655.	1.6	29
25	Acoustic recordings data from an echoic environment and a toolkit for its analysis. <i>Data in Brief</i> , 2018, 21, 1451-1457.	0.5	2
26	Deviance sensitivity in the auditory cortex of freely moving rats. <i>PLoS ONE</i> , 2018, 13, e0197678.	1.1	32
27	Acoustic calibration in an echoic environment. <i>Journal of Neuroscience Methods</i> , 2018, 309, 60-70.	1.3	2
28	The Claustrum Supports Resilience to Distraction. <i>Current Biology</i> , 2018, 28, 2752-2762.e7.	1.8	105
29	Primary Auditory Cortex is Required for Anticipatory Motor Response. <i>Cerebral Cortex</i> , 2017, 27, 3254-3271.	1.6	53
30	BACE inhibition-dependent repair of Alzheimer's pathophysiology. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 8631-8636.	3.3	93
31	Stimulus-specific adaptation in a recurrent network model of primary auditory cortex. <i>PLoS Computational Biology</i> , 2017, 13, e1005437.	1.5	60
32	The Representation of Interaural Time Differences in High-Frequency Auditory Cortex. <i>Cerebral Cortex</i> , 2016, 26, bhu230.	1.6	5
33	Early indices of deviance detection in humans and animal models. <i>Biological Psychology</i> , 2016, 116, 23-27.	1.1	43
34	Detection of Tones Masked by Fluctuating Noise in Rat Auditory Cortex. <i>Cerebral Cortex</i> , 2016, 27, 5130-5143.	1.6	6
35	Early multisensory integration of self and source motion in the auditory system. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 8308-8313.	3.3	20
36	The Representation of Prediction Error in Auditory Cortex. <i>PLoS Computational Biology</i> , 2016, 12, e1005058.	1.5	68

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37	Rescue of long-range circuit dysfunction in Alzheimer's disease models. <i>Nature Neuroscience</i> , 2015, 18, 1623-1630.	7.1	179
38	Detecting the unexpected. <i>Current Opinion in Neurobiology</i> , 2015, 35, 142-147.	2.0	79
39	Interplay between population firing stability and single neuron dynamics in hippocampal networks. <i>ELife</i> , 2015, 4, .	2.8	95
40	Across-ear stimulus-specific adaptation in the auditory cortex. <i>Frontiers in Neural Circuits</i> , 2014, 8, 89.	1.4	7
41	Using Tweedie distributions for fitting spike count data. <i>Journal of Neuroscience Methods</i> , 2014, 225, 13-28.	1.3	12
42	The Neural Code That Makes Us Human. <i>Science</i> , 2014, 343, 978-979.	6.0	11
43	Stimulus-specific adaptation and deviance detection in the auditory system: experiments and models. <i>Biological Cybernetics</i> , 2014, 108, 655-663.	0.6	134
44	Single neuron and population coding of natural sounds in auditory cortex. <i>Current Opinion in Neurobiology</i> , 2014, 24, 103-110.	2.0	62
45	Auditory Cortical Processing in Real-World Listening: The Auditory System Going Real. <i>Journal of Neuroscience</i> , 2014, 34, 15135-15138.	1.7	19
46	Local versus global scales of organization in auditory cortex. <i>Trends in Neurosciences</i> , 2014, 37, 502-510.	4.2	105
47	Intracellular Correlates of Stimulus-Specific Adaptation. <i>Journal of Neuroscience</i> , 2014, 34, 3303-3319.	1.7	66
48	Frequency Tuning in the Behaving Mouse: Different Bandwidths for Discrimination and Generalization. <i>PLoS ONE</i> , 2014, 9, e91676.	1.1	59
49	Elevated Correlations in Neuronal Ensembles of Mouse Auditory Cortex Following Parturition. <i>Journal of Neuroscience</i> , 2013, 33, 12851-12861.	1.7	40
50	Stimulus-Specific Adaptation Beyond Pure Tones. <i>Advances in Experimental Medicine and Biology</i> , 2013, 787, 411-418.	0.8	27
51	An ear for statistics. <i>Nature Neuroscience</i> , 2013, 16, 381-382.	7.1	16
52	The neuro-pianist. <i>Frontiers in Systems Neuroscience</i> , 2013, 7, 35.	1.2	6
53	Context-Dependent Processing in Auditory Cortex. , 2013, , 1-3.		0
54	Auditory abstraction from spectro-temporal features to coding auditory entities. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 18968-18973.	3.3	43

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55	Sensitivity to Complex Statistical Regularities in Rat Auditory Cortex. <i>Neuron</i> , 2012, 76, 603-615.	3.8	141
56	Sound-evoked network calcium transients in mouse auditory cortex <i>in vivo</i> . <i>Journal of Physiology</i> , 2012, 590, 899-918.	1.3	60
57	Predictive information processing in the brain: The neural perspective. <i>International Journal of Psychophysiology</i> , 2012, 83, 253-255.	0.5	14
58	Frequency discrimination and stimulus deviance in the inferior colliculus and cochlear nucleus. <i>Frontiers in Neural Circuits</i> , 2012, 6, 119.	1.4	62
59	First Spike Latency Code for Interaural Phase Difference Discrimination in the Guinea Pig Inferior Colliculus. <i>Journal of Neuroscience</i> , 2011, 31, 9192-9204.	1.7	33
60	Functional mapping of single spines in cortical neurons <i>in vivo</i> . <i>Nature</i> , 2011, 475, 501-505.	13.7	360
61	Music and the Auditory Brain: Where is the Connection?. <i>Frontiers in Human Neuroscience</i> , 2011, 5, 106.	1.0	5
62	Stimulus-Specific Adaptation and Deviance Detection in the Rat Auditory Cortex. <i>PLoS ONE</i> , 2011, 6, e23369.	1.1	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. <i>Vision Research</i> , 2010, 50, 391-401.	0.7	28
65	Functional organization and population dynamics in the mouse primary auditory cortex. <i>Nature Neuroscience</i> , 2010, 13, 353-360.	7.1	327
66	Neural correlates of binaural masking level difference in the inferior colliculus of the barn owl ( <i>Tyto alba</i> ). <i>European Journal of Neuroscience</i> , 2010, 32, 606-618.	1.2	10
67	Stimulus-Specific Adaptation in the Auditory Thalamus of the Anesthetized Rat. <i>PLoS ONE</i> , 2010, 5, e14071.	1.1	215
68	<i>Auditory Neuroscience</i> . , 2010, , .		70
69	Reverse hierarchies and sensory learning. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2009, 364, 285-299.	1.8	240
70	Unraveling the principles of auditory cortical processing: can we learn from the visual system?. <i>Nature Neuroscience</i> , 2009, 12, 698-701.	7.1	145
71	Modeling the auditory scene: predictive regularity representations and perceptual objects. <i>Trends in Cognitive Sciences</i> , 2009, 13, 532-540.	4.0	474
72	Response to Letter: Melloni et al., "Transient Induced Gamma-Band Response in EEG as a Manifestation of Miniature Saccades." <i>Neuron</i> 58, 429-441. <i>Neuron</i> , 2009, 62, 10-12.	3.8	9

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73	Inhibitory Plasticity in Auditory Cortex. <i>Neuron</i> , 2009, 62, 605-607.	3.8	2
74	Responses of neurons in the inferior colliculus to binaural disparities: Insights from the use of Fisher information and mutual information. <i>Journal of Neuroscience Methods</i> , 2008, 169, 391-404.	1.3	14
75	Ultra-fine frequency tuning revealed in single neurons of human auditory cortex. <i>Nature</i> , 2008, 451, 197-201.	13.7	157
76	Transient Induced Gamma-Band Response in EEG as a Manifestation of Miniature Saccades. <i>Neuron</i> , 2008, 58, 429-441.	3.8	690
77	Processing of complex sounds in the auditory system. <i>Current Opinion in Neurobiology</i> , 2008, 18, 413-417.	2.0	88
78	Functional Gradients of Auditory Sensitivity along the Anterior Ectosylvian Sulcus of the Cat. <i>Journal of Neuroscience</i> , 2008, 28, 3657-3667.	1.7	23
79	Low-Level Information and High-Level Perception: The Case of Speech in Noise. <i>PLoS Biology</i> , 2008, 6, e126.	2.6	96
80	Responses of Auditory Cortex to Complex Stimuli: Functional Organization Revealed Using Intrinsic Optical Signals. <i>Journal of Neurophysiology</i> , 2008, 99, 1928-1941.	0.9	60
81	Encoding by Response Duration in the Basal Ganglia. <i>Journal of Neurophysiology</i> , 2008, 100, 3244-3252.	0.9	7
82	Neurons and objects: the case of auditory cortex. <i>Frontiers in Neuroscience</i> , 2008, 2, 107-114.	1.4	62
83	Physiological and Anatomical Evidence for Multisensory Interactions in Auditory Cortex. <i>Cerebral Cortex</i> , 2007, 17, 2172-2189.	1.6	317
84	Information theory in auditory research. <i>Hearing Research</i> , 2007, 229, 94-105.	0.9	53
85	Processing of sounds by population spikes in a model of primary auditory cortex. <i>Frontiers in Neuroscience</i> , 2007, 1, 197-209.	1.4	49
86	The effects of background noise on the neural responses to natural sounds in cat primary auditory cortex. <i>Frontiers in Computational Neuroscience</i> , 2007, 1, 3.	1.2	54
87	Mismatch Negativity and Stimulus-Specific Adaptation in Animal Models. <i>Journal of Psychophysiology</i> , 2007, 21, 214-223.	0.3	187
88	Responses of Neurons in Primary Auditory Cortex (A1) to Pure Tones in the Halothane-Anesthetized Cat. <i>Journal of Neurophysiology</i> , 2006, 95, 3756-3769.	0.9	85
89	Reduction of Information Redundancy in the Ascending Auditory Pathway. <i>Neuron</i> , 2006, 51, 359-368.	3.8	226
90	Encoding Stimulus Information by Spike Numbers and Mean Response Time in Primary Auditory Cortex. <i>Journal of Computational Neuroscience</i> , 2005, 19, 199-221.	0.6	130

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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.	1.6	189
93	Representation of Tone in Fluctuating Maskers in the Ascending Auditory System. Journal of Neuroscience, 2005, 25, 1503-1513.	1.7	84
94	Multiple Time Scales of Adaptation in Auditory Cortex Neurons. Journal of Neuroscience, 2004, 24, 10440-10453.	1.7	635
95	Processing of complex stimuli and natural scenes in the auditory cortex. Current Opinion in Neurobiology, 2004, 14, 474-480.	2.0	207
96	Cortical processing of complex sound: a way forward?. Trends in Neurosciences, 2004, 27, 181-185.	4.2	65
97	Large-Scale Organization of Ferret Auditory Cortex Revealed Using Continuous Acquisition of Intrinsic Optical Signals. Journal of Neurophysiology, 2004, 92, 2574-2588.	0.9	73
98	Primary auditory cortex of cats: feature detection or something else?. Biological Cybernetics, 2003, 89, 397-406.	0.6	124
99	Processing of low-probability sounds by cortical neurons. Nature Neuroscience, 2003, 6, 391-398.	7.1	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.	0.9	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.	1.7	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.	0.3	12
104	Relating cluster and population responses to natural sounds and tonal stimuli in cat primary auditory cortex. Hearing Research, 2001, 152, 110-127.	0.9	35
105	Auditory Edge Detection: A Neural Model for Physiological and Psychoacoustical Responses to Amplitude Transients. Journal of Neurophysiology, 2001, 85, 2303-2323.	0.9	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.	1.3	10
108	Recurrence Methods in the Analysis of Learning Processes. Neural Computation, 2001, 13, 1839-1861.	1.3	0

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109	Responses to linear and logarithmic frequency-modulated sweeps in ferret primary auditory cortex. <i>European Journal of Neuroscience</i> , 2000, 12, 549-562.	1.2	112
110	Auditory localization using direction-dependent spectral information. <i>Neurocomputing</i> , 2000, 32-33, 767-773.	3.5	5
111	Spectral Integration by Type II Interneurons in Dorsal Cochlear Nucleus. <i>Journal of Neurophysiology</i> , 1999, 82, 648-663.	0.9	61
112	Responses of auditory-cortex neurons to structural features of natural sounds. <i>Nature</i> , 1999, 397, 154-157.	13.7	303
113	Physiology of MPTP Tremor. <i>Movement Disorders</i> , 1998, 13, 29-34.	2.2	71
114	Linear and Nonlinear Spectral Integration in Type IV Neurons of the Dorsal Cochlear Nucleus. I. Regions of Linear Interaction. <i>Journal of Neurophysiology</i> , 1997, 78, 790-799.	0.9	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. <i>Journal of Neurophysiology</i> , 1997, 78, 800-811.	0.9	54
116	WHY DO CATS NEED A DORSAL COCHLEAR NUCLEUS?. <i>Journal of Basic and Clinical Physiology and Pharmacology</i> , 1996, 7, 199-220.	0.7	29
117	Somatosensory effects on neurons in dorsal cochlear nucleus. <i>Journal of Neurophysiology</i> , 1995, 73, 743-765.	0.9	193
118	“Dynamics of neuronal interactions” cannot be explained by “neuronal transients”. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 1995, 261, 407-410.	1.2	13
119	Population responses to multifrequency sounds in the cat auditory cortex: Four-tone complexes. <i>Hearing Research</i> , 1994, 72, 223-236.	0.9	32
120	Population responses to multifrequency sounds in the cat auditory cortex: One- and two-parameter families of sounds. <i>Hearing Research</i> , 1994, 72, 206-222.	0.9	82
121	In search of the best stimulus: An optimization procedure for finding efficient stimuli in the cat auditory cortex. <i>Hearing Research</i> , 1994, 72, 237-253.	0.9	44
122	DYNAMICS OF COHERENCE IN CORTICAL NEURAL ACTIVITY: EXPERIMENTAL OBSERVATIONS AND FUNCTIONAL INTERPRETATIONS. <i>International Journal of Neural Systems</i> , 1992, 03, 105-114.	3.2	0
123	Analysis of the activity of single neurons in stochastic settings. <i>Biological Cybernetics</i> , 1988, 59, 201-215.	0.6	17