

# Sliman Bensmaia

## List of Publications by Year in descending order

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119  
papers

8,775  
citations

41258

49  
h-index

53109

85  
g-index

143  
all docs

143  
docs citations

143  
times ranked

4430  
citing authors

#	ARTICLE	IF	CITATIONS
1	Intracortical microstimulation of human somatosensory cortex. <i>Science Translational Medicine</i> , 2016, 8, 361ra141.	5.8	547
2	Spatial and temporal codes mediate the tactile perception of natural textures. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 17107-17112.	3.3	323
3	Restoring sensorimotor function through intracortical interfaces: progress and looming challenges. <i>Nature Reviews Neuroscience</i> , 2014, 15, 313-325.	4.9	304
4	Restoring the sense of touch with a prosthetic hand through a brain interface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 18279-18284.	3.3	286
5	Individual differences in perceptual space for tactile textures: Evidence from multidimensional scaling. <i>Perception &amp; Psychophysics</i> , 2000, 62, 1534-1544.	2.3	258
6	Biomimetic sensory feedback through peripheral nerve stimulation improves dexterous use of a bionic hand. <i>Science Robotics</i> , 2019, 4, .	9.9	244
7	Pacian representations of fine surface texture. <i>Perception &amp; Psychophysics</i> , 2005, 67, 842-854.	2.3	229
8	Touch is a team effort: interplay of submodalities in cutaneous sensibility. <i>Trends in Neurosciences</i> , 2014, 37, 689-697.	4.2	218
9	The vibrations of texture. <i>Somatosensory &amp; Motor Research</i> , 2003, 20, 33-43.	0.4	209
10	The neural basis of perceived intensity in natural and artificial touch. <i>Science Translational Medicine</i> , 2016, 8, 362ra142.	5.8	205
11	The Neural Coding of Stimulus Intensity: Linking the Population Response of Mechanoreceptive Afferents with Psychophysical Behavior. <i>Journal of Neuroscience</i> , 2007, 27, 11687-11699.	1.7	204
12	Simulating tactile signals from the whole hand with millisecond precision. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E5693-E5702.	3.3	191
13	The Representation of Stimulus Orientation in the Early Stages of Somatosensory Processing. <i>Journal of Neuroscience</i> , 2008, 28, 776-786.	1.7	166
14	Texture perception through direct and indirect touch: An analysis of perceptual space for tactile textures in two modes of exploration. <i>Somatosensory &amp; Motor Research</i> , 2007, 24, 53-70.	0.4	165
15	Natural scenes in tactile texture. <i>Journal of Neurophysiology</i> , 2014, 111, 1792-1802.	0.9	163
16	Multiplexing Stimulus Information through Rate and Temporal Codes in Primate Somatosensory Cortex. <i>PLoS Biology</i> , 2013, 11, e1001558.	2.6	158
17	Temporal Frequency Channels Are Linked across Audition and Touch. <i>Current Biology</i> , 2009, 19, 561-566.	1.8	151
18	Neural Basis of Touch and Proprioception in Primate Cortex. , 2018, 8, 1575-1602.		150

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19	Biomimetic approaches to bionic touch through a peripheral nerve interface. <i>Neuropsychologia</i> , 2015, 79, 344-353.	0.7	148
20	Millisecond Precision Spike Timing Shapes Tactile Perception. <i>Journal of Neuroscience</i> , 2012, 32, 15309-15317.	1.7	139
21	Vibrotactile adaptation impairs discrimination of fine, but not coarse, textures. <i>Somatosensory &amp; Motor Research</i> , 2001, 18, 253-262.	0.4	133
22	The coding of roughness.. <i>Canadian Journal of Experimental Psychology</i> , 2007, 61, 184-195.	0.7	125
23	Behavioral assessment of sensitivity to intracortical microstimulation of primate somatosensory cortex. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 15202-15207.	3.3	122
24	A Continuum Mechanical Model of Mechanoreceptive Afferent Responses to Indented Spatial Patterns. <i>Journal of Neurophysiology</i> , 2006, 95, 3852-3864.	0.9	119
25	Vibrotactile intensity and frequency information in the Pacinian system: A psychophysical model. <i>Perception &amp; Psychophysics</i> , 2005, 67, 828-841.	2.3	114
26	Restoration of sensory information via bionic hands. <i>Nature Biomedical Engineering</i> , 2023, 7, 443-455.	11.6	111
27	Behavioral Demonstration of a Somatosensory Neuroprosthesis. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2013, 21, 500-507.	2.7	108
28	Vibratory Adaptation of Cutaneous Mechanoreceptive Afferents. <i>Journal of Neurophysiology</i> , 2005, 94, 3023-3036.	0.9	105
29	Vibrotaction and texture perception. <i>Behavioural Brain Research</i> , 2002, 135, 51-56.	1.2	104
30	Stability of Sensory Topographies in Adult Cortex. <i>Trends in Cognitive Sciences</i> , 2017, 21, 195-204.	4.0	104
31	Sensory adaptation to electrical stimulation of the somatosensory nerves. <i>Journal of Neural Engineering</i> , 2018, 15, 046002.	1.8	99
32	Convergence of Submodality-Specific Input Onto Neurons in Primary Somatosensory Cortex. <i>Journal of Neurophysiology</i> , 2009, 102, 1843-1853.	0.9	96
33	Shape Invariant Coding of Motion Direction in Somatosensory Cortex. <i>PLoS Biology</i> , 2010, 8, e1000305.	2.6	94
34	The Effect of Surface Wave Propagation on Neural Responses to Vibration in Primate Glabrous Skin. <i>PLoS ONE</i> , 2012, 7, e31203.	1.1	94
35	Time-Course of Vibratory Adaptation and Recovery in Cutaneous Mechanoreceptive Afferents. <i>Journal of Neurophysiology</i> , 2005, 94, 3037-3045.	0.9	87
36	Complex tactile waveform discrimination. <i>Journal of the Acoustical Society of America</i> , 2000, 108, 1236.	0.5	76

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37	Neural Mechanisms of Tactile Motion Integration in Somatosensory Cortex. <i>Neuron</i> , 2011, 69, 536-547.	3.8	73
38	The neural mechanisms of manual dexterity. <i>Nature Reviews Neuroscience</i> , 2021, 22, 741-757.	4.9	73
39	Biomimetic encoding model for restoring touch in bionic hands through a nerve interface. <i>Journal of Neural Engineering</i> , 2018, 15, 066033.	1.8	72
40	A dense array stimulator to generate arbitrary spatio-temporal tactile stimuli. <i>Journal of Neuroscience Methods</i> , 2007, 161, 62-74.	1.3	71
41	Importance of spike timing in touch: an analogy with hearing?. <i>Current Opinion in Neurobiology</i> , 2016, 40, 142-149.	2.0	69
42	Rate and timing of cortical responses driven by separate sensory channels. <i>ELife</i> , 2015, 4, e10450.	2.8	69
43	Tactile intensity and population codes. <i>Behavioural Brain Research</i> , 2008, 190, 165-173.	1.2	66
44	Restoring tactile and proprioceptive sensation through a brain interface. <i>Neurobiology of Disease</i> , 2015, 83, 191-198.	2.1	66
45	Feeling form: the neural basis of haptic shape perception. <i>Journal of Neurophysiology</i> , 2016, 115, 631-642.	0.9	66
46	Influence of Visual Motion on Tactile Motion Perception. <i>Journal of Neurophysiology</i> , 2006, 96, 1625-1637.	0.9	64
47	Predicting the Timing of Spikes Evoked by Tactile Stimulation of the Hand. <i>Journal of Neurophysiology</i> , 2010, 104, 1484-1496.	0.9	64
48	The effects of chronic intracortical microstimulation on neural tissue and fine motor behavior. <i>Journal of Neural Engineering</i> , 2015, 12, 066018.	1.8	64
49	The neural basis of tactile motion perception. <i>Journal of Neurophysiology</i> , 2014, 112, 3023-3032.	0.9	63
50	Kinematics of unconstrained tactile texture exploration. <i>Journal of Neurophysiology</i> , 2015, 113, 3013-3020.	0.9	58
51	Biological and bionic hands: natural neural coding and artificial perception. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2015, 370, 20140209.	1.8	56
52	The tactile integration of local motion cues is analogous to its visual counterpart. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, 8130-8135.	3.3	55
53	Seeing and Feeling Motion: Canonical Computations in Vision and Touch. <i>PLoS Biology</i> , 2015, 13, e1002271.	2.6	50
54	The effect of chronic intracortical microstimulation on the electrode-tissue interface. <i>Journal of Neural Engineering</i> , 2014, 11, 026004.	1.8	48

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55	High-dimensional representation of texture in somatosensory cortex of primates. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 3268-3277.	3.3	48
56	Neural population dynamics in motor cortex are different for reach and grasp. ELife, 2020, 9, .	2.8	46
57	The tactile perception of stimulus orientation. Somatosensory & Motor Research, 2008, 25, 49-59.	0.4	45
58	SA1 and RA Afferent Responses to Static and Vibrating Gratings. Journal of Neurophysiology, 2006, 95, 1771-1782.	0.9	44
59	Temporal Factors in Tactile Spatial Acuity: Evidence for RA Interference in Fine Spatial Processing. Journal of Neurophysiology, 2006, 95, 1783-1791.	0.9	42
60	Separate Mechanisms for Audio-Tactile Pitch and Loudness Interactions. Frontiers in Psychology, 2010, 1, 160.	1.1	42
61	A simple model of mechanotransduction in primate glabrous skin. Journal of Neurophysiology, 2013, 109, 1350-1359.	0.9	42
62	Neural Coding of Contact Events in Somatosensory Cortex. Cerebral Cortex, 2019, 29, 4613-4627.	1.6	42
63	The frequency of cortical microstimulation shapes artificial touch. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1191-1200.	3.3	42
64	Long-term stability of sensitivity to intracortical microstimulation of somatosensory cortex. Journal of Neural Engineering, 2015, 12, 056010.	1.8	40
65	Postural Representations of the Hand in the Primate Sensorimotor Cortex. Neuron, 2019, 104, 1000-1009.e7.	3.8	40
66	Conveying Tactile Feedback in Sensorized Hand Neuroprostheses Using a Biofidelic Model of Mechanotransduction. IEEE Transactions on Biomedical Circuits and Systems, 2009, 3, 398-404.	2.7	36
67	Sensitivity to microstimulation of somatosensory cortex distributed over multiple electrodes. Frontiers in Systems Neuroscience, 2015, 9, 47.	1.2	36
68	The neural code for tactile roughness in the somatosensory nerves. Journal of Neurophysiology, 2017, 118, 3107-3117.	0.9	36
69	Intracortical Somatosensory Stimulation to Elicit Fingertip Sensations in an Individual With Spinal Cord Injury. Neurology, 2022, 98, .	1.5	36
70	Speed invariance of tactile texture perception. Journal of Neurophysiology, 2017, 118, 2371-2377.	0.9	33
71	The science and engineering behind sensitized brain-controlled bionic hands. Physiological Reviews, 2022, 102, 551-604.	13.1	32
72	Key considerations in designing a somatosensory neuroprosthesis. Journal of Physiology (Paris), 2016, 110, 402-408.	2.1	31

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73	Unexpected complexity of everyday manual behaviors. <i>Nature Communications</i> , 2020, 11, 3564.	5.8	31
74	A transduction model of the Meissner corpuscle. <i>Mathematical Biosciences</i> , 2002, 176, 203-217.	0.9	30
75	Textural timbre. <i>Communicative and Integrative Biology</i> , 2009, 2, 344-346.	0.6	30
76	Perceptual Spaces: Mathematical Structures to Neural Mechanisms. <i>Journal of Neuroscience</i> , 2013, 33, 17597-17602.	1.7	30
77	Feeling fooled: Texture contaminates the neural code for tactile speed. <i>PLoS Biology</i> , 2019, 17, e3000431.	2.6	30
78	Does Afferent Heterogeneity Matter in Conveying Tactile Feedback Through Peripheral Nerve Stimulation?. <i>IEEE Transactions on Neural Systems and Rehabilitation Engineering</i> , 2011, 19, 514-520.	2.7	29
79	Methodological considerations for a chronic neural interface with the cuneate nucleus of macaques. <i>Journal of Neurophysiology</i> , 2017, 118, 3271-3281.	0.9	28
80	Effect of scanning speed on texture-elicited vibrations. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20190892.	1.5	26
81	Decoding hand kinematics from population responses in sensorimotor cortex during grasping. <i>Journal of Neural Engineering</i> , 2020, 17, 046035.	1.8	26
82	Chronic Use of a Sensitized Bionic Hand Does Not Remap the Sense of Touch. <i>Cell Reports</i> , 2020, 33, 108539.	2.9	25
83	A comprehensive model-based framework for optimal design of biomimetic patterns of electrical stimulation for prosthetic sensation. <i>Journal of Neural Engineering</i> , 2020, 17, 046045.	1.8	23
84	Edge orientation signals in tactile afferents of macaques. <i>Journal of Neurophysiology</i> , 2016, 116, 2647-2655.	0.9	21
85	Sensory computations in the cuneate nucleus of macaques. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	21
86	Stoney vs. Histed: Quantifying the spatial effects of intracortical microstimulation. <i>Brain Stimulation</i> , 2022, 15, 141-151.	0.7	20
87	Frequency Shapes the Quality of Tactile Percepts Evoked through Electrical Stimulation of the Nerves. <i>Journal of Neuroscience</i> , 2022, 42, 2052-2064.	1.7	20
88	A computational model that predicts behavioral sensitivity to intracortical microstimulation. <i>Journal of Neural Engineering</i> , 2017, 14, 016012.	1.8	19
89	Rapid geometric feature signaling in the simulated spiking activity of a complete population of tactile nerve fibers. <i>Journal of Neurophysiology</i> , 2019, 121, 2071-2082.	0.9	18
90	A Variation Code Accounts for the Perceived Roughness of Coarsely Textured Surfaces. <i>Scientific Reports</i> , 2017, 7, 46699.	1.6	17

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91	Of mice and monkeys: Somatosensory processing in two prominent animal models. <i>Progress in Neurobiology</i> , 2021, 201, 102008.	2.8	17
92	Encoding of limb state by single neurons in the cuneate nucleus of awake monkeys. <i>Journal of Neurophysiology</i> , 2021, 126, 693-706.	0.9	17
93	Characterizing the short-latency evoked response to intracortical microstimulation across a multi-electrode array. <i>Journal of Neural Engineering</i> , 2022, 19, 026044.	1.8	17
94	Emergence of an Invariant Representation of Texture in Primate Somatosensory Cortex. <i>Cerebral Cortex</i> , 2020, 30, 3228-3239.	1.6	16
95	The Effect of Contact Force on the Responses of Tactile Nerve Fibers to Scanned Textures. <i>Neuroscience</i> , 2018, 389, 99-103.	1.1	15
96	Texture is encoded in precise temporal spiking patterns in primate somatosensory cortex. <i>Nature Communications</i> , 2022, 13, 1311.	5.8	15
97	Novel intraoperative online functional mapping of somatosensory finger representations for targeted stimulating electrode placement: technical note. <i>Journal of Neurosurgery</i> , 2021, , 1-8.	0.9	14
98	A multi-digit tactile motion stimulator. <i>Journal of Neuroscience Methods</i> , 2014, 226, 80-87.	1.3	13
99	Intracortical microstimulation of somatosensory cortex enables object identification through perceived sensations. , 2021, 2021, 6259-6262.		12
100	Robo-Psychophysics: Extracting Behaviorally Relevant Features from the Output of Sensors on a Prosthetic Finger. <i>IEEE Transactions on Haptics</i> , 2016, 9, 499-507.	1.8	10
101	Using Bionics to Restore Sensation to Reconstructed Breasts. <i>Frontiers in Neurobotics</i> , 2020, 14, 24.	1.6	10
102	Comparing the effects of isoflurane and pentobarbital on the responses of cutaneous mechanoreceptive afferents. <i>BMC Anesthesiology</i> , 2013, 13, 10.	0.7	9
103	Perceived timing of cutaneous vibration and intracortical microstimulation of human somatosensory cortex. <i>Brain Stimulation</i> , 2022, 15, 881-888.	0.7	9
104	Discriminating smooth from grooved surfaces: effects of random variations in skin penetration. <i>Experimental Brain Research</i> , 2008, 188, 331-340.	0.7	7
105	Vision is superior to touch in shape perception even with equivalent peripheral input. <i>Journal of Neurophysiology</i> , 2016, 115, 92-99.	0.9	7
106	Fingertip skin as a linear medium for wave propagation. , 2017, , .		7
107	Finger Posture and Finger Load are Perceived Independently. <i>Scientific Reports</i> , 2019, 9, 15031.	1.6	7
108	Information about contact force and surface texture is mixed in the firing rates of cutaneous afferent neurons. <i>Journal of Neurophysiology</i> , 2021, 125, 496-508.	0.9	7

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109	Tactile Feedback from the Hand. Springer Tracts in Advanced Robotics, 2014, , 143-157.	0.3	7
110	Artificial sensory feedback for bionic hands. , 2020, , 131-145.		6
111	Proprioceptive representations of the hand in somatosensory cortex. Current Opinion in Physiology, 2021, 21, 9-16.	0.9	5
112	Restoring Touch through Intracortical Microstimulation of Human Somatosensory Cortex. , 2017, , .		4
113	Somatic Sensation. Series on Bioengineering and Biomedical Engineering, 2017, , 134-152.	0.1	2
114	Restoring the sense of touch with electrical stimulation of the nerve and brain. , 2021, , 349-378.		2
115	The Neural Mechanisms of Touch and Proprioception at the Somatosensory Periphery. , 2020, , 2-27.		2
116	Steven Hsiao: In Memoriam. Neuron, 2015, 85, 458-461.	3.8	0
117	Haptics in Neuroscience. IEEE Transactions on Haptics, 2016, 9, 443-445.	1.8	0
118	Proprioceptive sensitivity to imposed finger deflections. Journal of Neurophysiology, 2022, 127, 412-420.	0.9	0
119	Prehension kinematics in humans and macaques. Journal of Neurophysiology, 2022, 127, 1669-1678.	0.9	0