# Stephen H Scott

List of Publications by Year
in descending order

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Optimal feedback control and the neural basis of volitional motor control. Nature Reviews Neuroscience, 2004, 5, 532-545. | 4.9 | 833 |
| 2 | Cortical control of reaching movements. Current Opinion in Neurobiology, 1997, 7, 849-859. | 2.0 | 419 |
| 3 | Apparatus for measuring and perturbing shoulder and elbow joint positions and torques during reaching. Journal of Neuroscience Methods, 1999, 89, 119-127. | 1.3 | 382 |
| 4 | Reaching Movements With Similar Hand Paths But Different Arm Orientations. I. Activity of Individual Cells in Motor Cortex. Journal of Neurophysiology, 1997, 77, 826-852. | 0.9 | 363 |
| 5 | Primary motor cortex underlies multi-joint integration for fast feedback control. Nature, 2011, 478, 387-390. | 13.7 | 294 |
| 6 | The computational and neural basis of voluntary motor control and planning. Trends in Cognitive Sciences, 2012, 16, 541-549. | 4.0 | 292 |
| 7 | Quantitative Assessment of Limb Position Sense Following Stroke. Neurorehabilitation and Neural Repair, 2010, 24, 178-187. | 1.4 | 283 |
| 8 | Optimal feedback control and the long-latency stretch response. Experimental Brain Research, 2012, 218, 341-359. | 0.7 | 240 |
| 9 | Long-Latency Reflexes of the Human Arm Reflect an Internal Model of Limb Dynamics. Current Biology, 2008, 18, 449-453. | 1.8 | 232 |
| 10 | Rapid Motor Responses Are Appropriately Tuned to the Metrics of a Visuospatial Task. Journal of Neurophysiology, 2008, 100, 224-238. | 0.9 | 216 |
| 11 | Assessment of Upper-Limb Sensorimotor Function of Subacute Stroke Patients Using Visually Guided Reaching. Neurorehabilitation and Neural Repair, 2010, 24, 528-541. | 1.4 | 209 |
| 12 | Dissociation between hand motion and population vectors from neural activity in motor cortex. Nature, 2001, 413, 161-165. | 13.7 | 198 |
| 13 | Reaching Movements With Similar Hand Paths but Different Arm Orientations. II. Activity of Individual Cells in Dorsal Premotor Cortex and Parietal Area 5. Journal of Neurophysiology, 1997, 78, 2413-2426. | 0.9 | 194 |
| 14 | A Functional Taxonomy of Bottom-Up Sensory Feedback Processing for Motor Actions. Trends in Neurosciences, 2016, 39, 512-526. | 4.2 | 189 |
| 15 | Limited transfer of learning between unimanual and bimanual skills within the same limb. Nature Neuroscience, 2006, 9, 1364-1366. | 7.1 | 178 |
| 16 | Random change in cortical load representation suggests distinct control of posture and movement. Nature Neuroscience, 2005, 8, 498-504. | 7.1 | 177 |
| 17 | Potential of robots as next-generation technology for clinical assessment of neurological disorders and upper-limb therapy. Journal of Rehabilitation Research and Development, 2011, 48, 335. | 1.6 | 153 |
| 18 | Influence of the behavioral goal and environmental obstacles on rapid feedback responses. Journal of Neurophysiology, 2012, 108, 999-1009. | 0.9 | 146 |

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|---|---|---|---|
| 19 | Inconvenient Truths about neural processing in primary motor cortex. Journal of Physiology, 2008, 586, 1217-1224. | 1.3 | 143 |
| 20 | Morphometry ofMacaca mulatta forelimb. I. Shoulder and elbow muscles and segment inertial parameters. Journal of Morphology, 2000, 245, 206-224. | 0.6 | 138 |
| 21 | Mechanical properties of aponeurosis and tendon of the cat soleus muscle during whole-muscle isometric contractions. Journal of Morphology, 1995, 224, 73-86. | 0.6 | 137 |
| 22 | Rapid Online Selection between Multiple Motor Plans. Journal of Neuroscience, 2014, 34, 1769-1780. | 1.7 | 130 |
| 23 | Temporal Evolution of â€œAutomatic Gain-Scalingâ€. Journal of Neurophysiology, 2009, 102, 992-1003. | 0.9 | 128 |
| 24 | Overlap of internal models in motor cortex for mechanical loads during reaching. Nature, 2002, 417, 938-941. | 13.7 | 126 |
| 25 | The independence of deficits in position sense and visually guided reaching following stroke. Journal of NeuroEngineering and Rehabilitation, 2012, 9, 72. | 2.4 | 123 |
| 26 | The long-latency reflex is composed of at least two functionally independent processes. Journal of Neurophysiology, 2011, 106, 449-459. | 0.9 | 112 |
| 27 | Preference Distributions of Primary Motor Cortex Neurons Reflect Control Solutions Optimized for Limb Biomechanics. Neuron, 2013, 77, 168-179. | 3.8 | 111 |
| 28 | Feedback control during voluntary motor actions. Current Opinion in Neurobiology, 2015, 33, 85-94. | 2.0 | 110 |
| 29 | Mechanics of feline soleus: II design and validation of a mathematical model. Journal of Muscle Research and Cell Motility, 1996, 17, 221-233. | 0.9 | 108 |
| 30 | Rapid Feedback Responses Correlate with Reach Adaptation and Properties of Novel Upper Limb Loads. Journal of Neuroscience, 2013, 33, 15903-15914. | 1.7 | 106 |
| 31 | Mechanics of feline soleus: I. Effect of fascicle length and velocity on force output. Journal of Muscle Research and Cell Motility, 1996, 17, 207-219. | 0.9 | 104 |
| 32 | The role of primary motor cortex in goal-directed movements: insights from neurophysiological studies on non-human primates. Current Opinion in Neurobiology, 2003, 13, 671-677. | 2.0 | 99 |
| 33 | Concurrent assessment of gait kinematics using marker-based and markerless motion capture. Journal of Biomechanics, 2021, 127, 110665. | 0.9 | 98 |
| 34 | Stimulusâ€locked responses on human arm muscles reveal a rapid neural pathway linking visual input to arm motor output. European Journal of Neuroscience, 2010, 32, 1049-1057. | 1.2 | 96 |
| 35 | Distributed task-specific processing of somatosensory feedback for voluntary motor control. ELife, 2016, 5, . | 2.8 | 86 |
| 36 | Goal-Dependent Modulation of Fast Feedback Responses in Primary Motor Cortex. Journal of Neuroscience, 2014, 34, 4608-4617. | 1.7 | 85 |

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|---|---|---|---|
| 37 | Dynamic Multisensory Integration: Somatosensory Speed Trumps Visual Accuracy during Feedback Control. Journal of Neuroscience, 2016, 36, 8598-8611. | 1.7 | 84 |
| 38 | A robotic object hitting task to quantify sensorimotor impairments in participants with stroke. Journal of NeuroEngineering and Rehabilitation, 2014, 11, 47. | 2.4 | 82 |
| 39 | Neural Activity in Primary Motor Cortex Related to Mechanical Loads Applied to the Shoulder and Elbow During a Postural Task. Journal of Neurophysiology, 2001, 86, 2102-2108. | 0.9 | 81 |
| 40 | A motor learning strategy reflects neural circuitry for limb control. Nature Neuroscience, 2003, 6, 399-403. | 7.1 | 81 |
| 41 | Kinematics and Kinetics of Multijoint Reaching in Nonhuman Primates. Journal of Neurophysiology, 2003, 89, 2667-2677. | 0.9 | 80 |
| 42 | Primate Upper Limb Muscles Exhibit Activity Patterns That Differ From Their Anatomical Action During a Postural Task. Journal of Neurophysiology, 2006, 95, 493-504. | 0.9 | 77 |
| 43 | Examining Differences in Patterns of Sensory and Motor Recovery After Stroke With Robotics. Stroke, 2015, 46, 3459-3469. | 1.0 | 73 |
| 44 | Long-Latency Responses During Reaching Account for the Mechanical Interaction Between the Shoulder and Elbow Joints. Journal of Neurophysiology, 2009, 102, 3004-3015. | 0.9 | 69 |
| 45 | Priors Engaged in Long-Latency Responses to Mechanical Perturbations Suggest a Rapid Update in State Estimation. PLoS Computational Biology, 2013, 9, e1003177. | 1.5 | 69 |
| 46 | Comparison of Neural Responses in Primary Motor Cortex to Transient and Continuous Loads During Posture. Journal of Neurophysiology, 2009, 101, 150-163. | 0.9 | 66 |
| 47 | A perspective on multisensory integration and rapid perturbation responses. Vision Research, 2015, 110, 215-222. | 0.7 | 66 |
| 48 | Systematic changes in position sense accompany normal aging across adulthood. Journal of NeuroEngineering and Rehabilitation, 2014, 11, 43. | 2.4 | 65 |
| 49 | Assessment of spatiotemporal gait parameters using a deep learning algorithm-based markerless motion capture system. Journal of Biomechanics, 2021, 122, 110414. | 0.9 | 64 |
| 50 | Hand and joint paths during reaching movements with and without vision. Experimental Brain Research, 1998, 122, 157-164. | 0.7 | 63 |
| 51 | Rapid feedback corrections during a bimanual postural task. Journal of Neurophysiology, 2013, 109, 147-161. | 0.9 | 62 |
| 52 | Inter-session repeatability of markerless motion capture gait kinematics. Journal of Biomechanics, 2021, 121, 110422. | 0.9 | 60 |
| 53 | Robotic Assessment of Sensorimotor Deficits After Traumatic Brain Injury. Journal of Neurologic Physical Therapy, 2012, 36, 58-67. | 0.7 | 59 |
| 54 | Beyond Muscles Stiffness: Importance of State-Estimation to Account for Very Fast Motor Corrections. PLoS Computational Biology, 2014, 10, e1003869. | 1.5 | 57 |

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|---|---|---|---|
| 55 | Robust Control in Human Reaching Movements: A Model-Free Strategy to Compensate for Unpredictable Disturbances. Journal of Neuroscience, 2019, 39, 8135-8148. | 1.7 | 53 |
| 56 | Comparison of Onset Time and Magnitude of Activity for Proximal Arm Muscles and Motor Cortical Cells Before Reaching Movements. Journal of Neurophysiology, 1997, 77, 1016-1022. | 0.9 | 51 |
| 57 | Perturbation-evoked responses in primary motor cortex are modulated by behavioral context. Journal of Neurophysiology, 2014, 112, 2985-3000. | 0.9 | 51 |
| 58 | Multi-compartment model can explain partial transfer of learning within the same limb between unimanual and bimanual reaching. Experimental Brain Research, 2009, 194, 451-463. | 0.7 | 47 |
| 59 | A robot-based behavioural task to quantify impairments in rapid motor decisions and actions after stroke. Journal of NeuroEngineering and Rehabilitation, 2016, 13, 91. | 2.4 | 47 |
| 60 | Rapid motor responses quickly integrate visuospatial task constraints. Experimental Brain Research, 2011, 211, 231-242. | 0.7 | 45 |
| 61 | Central perception of position sense involves a distributed neural network â€" Evidence from lesion-behavior analyses. Cortex, 2016, 79, 42-56. | 1.1 | 45 |
| 62 | Independent representations of ipsilateral and contralateral limbs in primary motor cortex. ELife, 2019, 8, . | 2.8 | 44 |
| 63 | Apparent and Actual Trajectory Control Depend on the Behavioral Context in Upper Limb Motor Tasks. Journal of Neuroscience, 2015, 35, 12465-12476. | 1.7 | 43 |
| 64 | Visual Feedback Processing of the Limb Involves Two Distinct Phases. Journal of Neuroscience, 2019, 39, 6751-6765. | 1.7 | 43 |
| 65 | Nonuniform Distribution of Reach-Related and Torque-Related Activity in Upper Arm Muscles and Neurons of Primary Motor Cortex. Journal of Neurophysiology, 2006, 96, 3220-3230. | 0.9 | 41 |
| 66 | Morphometry ofmacaca mulatta forelimb. III. moment arm of shoulder and elbow muscles. Journal of Morphology, 2003, 255, 301-314. | 0.6 | 40 |
| 67 | Characterization of Torque-Related Activity in Primary Motor Cortex During a Multijoint Postural Task. Journal of Neurophysiology, 2007, 97, 2887-2899. | 0.9 | 39 |
| 68 | Lesion locations associated with persistent proprioceptive impairment in the upper limbs after stroke. NeuroImage: Clinical, 2018, 20, 955-971. | 1.4 | 39 |
| 69 | Cerebellar damage diminishes long-latency responses to multijoint perturbations. Journal of Neurophysiology, 2013, 109, 2228-2241. | 0.9 | 37 |
| 70 | Movement kinematics and proprioception in post-stroke spasticity: assessment using the Kinarm robotic exoskeleton. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 146. | 2.4 | 37 |
| 71 | Transient deactivation of dorsal premotor cortex or parietal area 5 impairs feedback control of the limb in macaques. Current Biology, 2021, 31, 1476-1487.e5. | 1.8 | 37 |
| 72 | Morphometry ofMacaca mulatta forelimb. II. Fiber-type composition in shoulder and elbow muscles. Journal of Morphology, 2002, 251, 323-332. | 0.6 | 36 |

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|---|---|---|---|
| 73 | Population vectors and motor cortex: neural coding or epiphenomenon?. Nature Neuroscience, 2000, 3, 307-308. | 7.1 | 35 |
| 74 | Anatomical correlates of proprioceptive impairments following acute stroke: A case series. Journal of the Neurological Sciences, 2014, 342, 52-61. | 0.3 | 35 |
| 75 | Rapid and flexible whole body postural responses are evoked from perturbations to the upper limb during goal-directed reaching. Journal of Neurophysiology, 2017, 117, 1070-1083. | 0.9 | 35 |
| 76 | Testâ€"retest reliability of KINARM robot sensorimotor and cognitive assessment: in pediatric ice hockey players. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 78. | 2.4 | 34 |
| 77 | Rotational dynamics in motor cortex are consistent with a feedback controller. ELife, 2021, 10, . | 2.8 | 34 |
| 78 | Robotic exoskeleton assessment of transient ischemic attack. PLoS ONE, 2017, 12, e0188786. | 1.1 | 33 |
| 79 | Long-Latency and Voluntary Responses to an Arm Displacement Can Be Rapidly Attenuated By Perturbation Offset. Journal of Neurophysiology, 2010, 103, 3195-3204. | 0.9 | 29 |
| 80 | Sensory-Motor Deficits in Children with Fetal Alcohol Spectrum Disorder Assessed Using a Robotic Virtual Reality Platform. Alcoholism: Clinical and Experimental Research, 2014, 38, 116-125. | 1.4 | 26 |
| 81 | Robot-based assessment of motor and proprioceptive function identifies biomarkers for prediction of functional independence measures. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 105. | 2.4 | 25 |
| 82 | Impaired corrective responses to postural perturbations of the arm in individuals with subacute stroke. Journal of NeuroEngineering and Rehabilitation, 2015, 12, 7. | 2.4 | 24 |
| 83 | Neurons in red nucleus and primary motor cortex exhibit similar responses to mechanical perturbations applied to the upper-limb during posture. Frontiers in Integrative Neuroscience, 2015, 9, 29. | 1.0 | 23 |
| 84 | Maintained Representations of the Ipsilateral and Contralateral Limbs during Bimanual Control in Primary Motor Cortex. Journal of Neuroscience, 2020, 40, 6732-6747. | 1.7 | 22 |
| 85 | Statistical measures of motor, sensory and cognitive performance across repeated robot-based testing. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 86. | 2.4 | 22 |
| 86 | Reply to 'One motor cortex, two different views'. Nature Neuroscience, 2000, 3, 964-965. | 7.1 | 20 |
| 87 | KAPS (kinematic assessment of passive stretch): a tool to assess elbow flexor and extensor spasticity after stroke using a robotic exoskeleton. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 59. | 2.4 | 19 |
| 88 | Individualized tracking of self-directed motor learning in group-housed mice performing a skilled lever positioning task in the home cage. Journal of Neurophysiology, 2018, 119, 337-346. | 0.9 | 19 |
| 89 | Computational approaches to motor control and their potential role for interpreting motor dysfunction. Current Opinion in Neurology, 2003, 16, 693-8. | 1.8 | 19 |
| 90 | Integration of proprioceptive and visual feedback during online control of reaching. Journal of Neurophysiology, 2022, 127, 354-372. | 0.9 | 18 |

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|---|---|---|---|
| 91 | Robotic technology provides objective and quantifiable metrics of neurocognitive functioning in survivors of critical illness:A feasibility study. Journal of Critical Care, 2018, 48, 228-236. | 1.0 | 17 |
| 92 | Long-Latency Feedback Coordinates Upper-Limb and Hand Muscles during Object Manipulation Tasks. ENeuro, 2016, 3, ENEURO.0129-15.2016. | 0.9 | 17 |
| 93 | Context-dependent inhibition of unloaded muscles during the long-latency epoch. Journal of Neurophysiology, 2015, 113, 192-202. | 0.9 | 16 |
| 94 | Primary motor cortex neurons classified in a postural task predict muscle activation patterns in a reaching task. Journal of Neurophysiology, 2016, 115, 2021-2032. | 0.9 | 15 |
| 95 | Online Corrections are Faster Because Movement Initiation Must Disengage Postural Control. Motor Control, 2016, 20, 162-170. | 0.3 | 15 |
| 96 | The feasibility of using robotic technology to quantify sensory, motor, and cognitive impairments associated with ALS. Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration, 2019, 20, 43-52. | 1.1 | 15 |
| 97 | Inter-rater reliability of kinesthetic measurements with the KINARM robotic exoskeleton. Journal of NeuroEngineering and Rehabilitation, 2017, 14, 42. | 2.4 | 14 |
| 98 | Vision of the upper limb fails to compensate for kinesthetic impairments in subacute stroke. Cortex, 2018, 109, 245-259. | 1.1 | 14 |
| 99 | Vision does not always help stroke survivors compensate for impaired limb position sense. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 129. | 2.4 | 14 |
| 100 | Differential loss of position sense and kinesthesia in sub-acute stroke. Cortex, 2019, 121, 414-426. | 1.1 | 13 |
| 101 | Correlations Between Primary Motor Cortex Activity with Recent Past and Future Limb Motion During Unperturbed Reaching. Journal of Neuroscience, 2018, 38, 7787-7799. | 1.7 | 12 |
| 102 | The feasibility of assessing cognitive and motor function in multiple sclerosis patients using robotics. Multiple Sclerosis Journal - Experimental, Translational and Clinical, 2020, 6, 205521732096494. | 0.5 | 11 |
| 103 | A postural unloading task to assess fast corrective responses in the upper limb following stroke. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 16. | 2.4 | 11 |
| 104 | Robotic tests for position sense and movement discrimination in the upper limb reveal that they each are highly reproducible but not correlated in healthy individuals. Journal of NeuroEngineering and Rehabilitation, 2020, 17, 103. | 2.4 | 10 |
| 105 | Using principal component analysis to reduce complex datasets produced by robotic technology in healthy participants. Journal of NeuroEngineering and Rehabilitation, 2018, 15, 71. | 2.4 | 8 |
| 106 | Assessing the relationship between brain tissue oxygenation and neurological dysfunction in critically ill patients: study protocol. International Journal of Clinical Trials, 2016, 3, 98. | 0.0 | 8 |
| 107 | Complex Spatiotemporal Tuning in Human Upper-Limb Muscles. Journal of Neurophysiology, 2010, 103, 564-572. | 0.9 | 7 |
| 108 | Quantified pre-operative neurological dysfunction predicts outcome after coronary artery bypass surgery. Aging Clinical and Experimental Research, 2020, 32, 289-297. | 1.4 | 7 |

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| 109 | Assessing various sensorimotor and cognitive functions in people with epilepsy is feasible with robotics. Epilepsy and Behavior, 2020, 103, 106859. | 0.9 | 7 |
| 110 | Interjoint coupling of position sense reflects sensory contributions of biarticular muscles. Journal of Neurophysiology, 2021, 125, 1223-1235. | 0.9 | 7 |
| 111 | Vision to action: new insights from a flip of the wrist. Nature Neuroscience, 2001, 4, 969-970. | 7.1 | 6 |
| 112 | Acute kidney injury is associated with subtle but quantifiable neurocognitive impairments. Nephrology Dialysis Transplantation, 2021, , . | 0.4 | 6 |
| 113 | Principal Components Analysis Using Data Collected From Healthy Individuals on Two Robotic Assessment Platforms Yields Similar Behavioral Patterns. Frontiers in Human Neuroscience, 2021, 15, 652201. | 1.0 | 6 |
| 114 | Integrated robotics platform with haptic control differentiates subjects with Parkinsonâ€™s disease from controls and quantifies the motor effects of levodopa. Journal of NeuroEngineering and Rehabilitation, 2019, 16, 124. | 2.4 | 5 |
| 115 | The Impact of Transient Ischemic Attack (TIA) on Brain and Behavior. Frontiers in Behavioral Neuroscience, 2019, 13, 44. | 1.0 | 5 |
| 116 | Assessing the relationship between near-infrared spectroscopy-derived regional cerebral oxygenation and neurological dysfunction in critically ill adults: a prospective observational multicentre protocol, on behalf of the Canadian Critical Care Trials Group. BMJ Open, 2019, 9, e029189. | 0.8 | 5 |
| 117 | A hierarchical ensemble model for automated assessment of stroke impairment. , 2008, , . | | 4 |
| 118 | Feedback throttled down for smooth moves. Nature, 2014, 509, 38-39. | 13.7 | 3 |
| 119 | Road to recovery: a study protocol quantifying neurological outcome in cardiac surgery patients and the role of cerebral oximetry. BMJ Open, 2019, 9, e032935. | 0.8 | 3 |
| 120 | Impairments in Cognitive Control Using a Reverse Visually Guided Reaching Task Following Stroke. Neurorehabilitation and Neural Repair, 2022, , 154596832211005. | 1.4 | 3 |
| 121 | Robotic Assessment of Upper Limb Function in a Nonhuman Primate Model of Chronic Stroke. Translational Stroke Research, 2021, 12, 569-580. | 2.3 | 2 |
| 122 | Quantifying changes over 1Âyear in motor and cognitive skill after transient ischemic attack (TIA) using robotics. Scientific Reports, 2021, 11, 17011. | 1.6 | 2 |
| 123 | Identifying neurocognitive outcomes and cerebral oxygenation in critically ill adults on acute kidney replacement therapy in the intensive care unit: the INCOGNITO-AKI study protocol. BMJ Open, 2021, 11, e049250. | 0.8 | 2 |
| 124 | Trial map : A visualization approach for verification of stroke impairment assessment database. , 2008, , . | | 1 |
| 125 | Quantitative assessment of sensorimotor dysfunction and recovery using robotics in athletes sustaining an acute sport-related concussion. British Journal of Sports Medicine, 2013, 47, e1.26-e1. | 3.1 | 1 |
| 126 | Putting Sensory Back into Voluntary Motor Control. Advances in Cognitive Neurodynamics, 2016, , 3-7. | 0.1 | 1 |

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|---|---|---|---|
| 127 | The relationship between cerebral oxygen saturation and quantitative metrics of neurological function after coronary bypass surgery: a feasibility study. Journal of Cardiovascular Surgery, 2018, 59, 716-728. | 0.3 | 1 |
| 128 | Reverse Visually Guided Reaching in Patients with Parkinsonâ€™s Disease. Parkinson's Disease, 2022, 2022, 1-14. | 0.6 | 1 |
| 129 | Stalling for Time: Itâ€™s Not the Magnitude, but the Way Neurons Fire that Matters. Neuron, 2017, 95, 6-8. | 3.8 | 0 |