

Luca Leonardo Bologna

Publication list

Journals

h-index: 8

- J1. **Bologna L.L.**, Tocco A., Smiriglia R., Romani A., Schürmann F., Migliore M., Online Interoperable Resources For Building Hippocampal Neuron Models Via The Hippocampus Hub. *Front Neuroinform.* Vol. 17, 2023, doi: 10.3389/fninf.2023.1271059. *In press*
- J2. **Bologna L.L.**, Smiriglia R., Lupascu C.A., Appukuttan S., Davison A.P., Ivaska G., Courcol JD, Migliore M., The EBRAINS Hodgkin-Huxley Neuron Builder: An online resource for building data-driven neuron models. *Front Neuroinform.* 2022 Sep 26. doi: 10.3389/fninf.2022.991609
- J3. Appukuttan S., **Bologna L.L.**, Schuermann F., Migliore M., Davison A.P., EBRAINS Live Papers-Interactive resource sheets for computational studies in neuroscience. 2023 Jan;21(1):101-113. doi: 10.1007/s12021-022-09598-z. Epub 2022 Aug 20.
- J4. **Bologna L.L.**, Smiriglia R., Curreri D., Migliore M., The EBRAINS NeuroFeatureExtract: An Online Resource for the Extraction of Neural Activity Features From Electrophysiological Data. *Front Neuroinform.* 2021 Aug 26;15:713899. doi: 10.3389/fninf.2021.713899. eCollection 2021.
- J5. Sáray S., Rössert C.A., Appukuttan S., Migliore R., Vitale P., Lupascu C.A., **Bologna L.L.**, Van Geit W., Romani A., Davison A.P., Muller E., Freund T.F., Káli S., HippoUnit: A software tool for the automated testing and systematic comparison of detailed models of hippocampal neurons based on electrophysiological data. *PLoS Comput Biol.* 2021 Jan 29;17(1):e1008114. doi: 10.1371/journal.pcbi.1008114. eCollection 2021
- J6. Bécu M.; Sheynikhovich D.; Tatur G.; Agathos C.; **Bologna L.L.**; Sahel J-A; Angelo Arleo. Age-related preference for geometric spatial cues during real-world navigation. *Nat. Hum. Behav.* 2019 Sep 23; doi: <https://doi.org/10.1038/s41562-019-0718-z>
- J7. Migliore R.; Lupascu CA.; **Bologna L.L.**; Romani A.; Courcol JD.; Antonel S.; Van Geit WAH.; Thomson AM.; Mercer A.; Lange S.; Falck J.; Rössert CA.; Shi Y.; Hagens O.; Pezzoli M.; Freund TF.; Kali S.; Muller EB.; Schürmann F.; Markram H.; Migliore M. The physiological variability of channel density in hippocampal CA1 pyramidal cells and interneurons explored using a unified data-driven modeling workflow. *PLoS Comput Biol.* 2018 Sep 17;14(9):e1006423. doi: 10.1371/journal.pcbi.1006423. eCollection 2018 Sep.
- J8. Korotchenko S.; Cingolani L.A.; Kuznetsova T.; **Bologna L.L.**; Chiappalone M.; Dityatev A. Modulation of network activity and induction of homeostatic synaptic plasticity by enzymatic removal of heparan sulfates. *Philos Trans R Soc Lond B Biol Sci.* 2014 Oct 19;369(1654). pii: 20140134. doi: 10.1098.
- J9. **Bologna, L. L.***; Pinoteau, J*.; Passot, J-B.; Garrido, J. A.; Vogel, J.; Ros Vidal, E. and Arleo, A. A closed-loop neurobotic system for fine touch sensing. *Journal of Neural*

Engineering, 10 (4): 046019, 2013. (*equal contribution; article selected as one of *Journal of Neural Engineering's Highlights of 2013*).

- J10. **Bologna, L. L.**; Pinoteau, J.; Brasselet, R.; Maggiali, M. and Arleo, A. Encoding/decoding of first and second order tactile afferents in a neurorobotic application. *Journal of Physiology P*, 105 (1-3): 25-35, 2011.
- J11. **Bologna, L. L.**; Pasquale, V.; Garofalo, M.; Gandolfo, M.; Baljon, P. L.; Maccione, A.; Martinoia, S. and Chiappalone, M. Investigating neuronal activity by SPYCODE multichannel data analyzer. *Neural Networks*, 23 (6): 685-697, 2010.
- J12. **Bologna, L. L.**; Nieuws, T; Tedesco, M; Chiappalone, M; Benfenati, F and Martinoia, S. Low-frequency stimulation enhances burst activity in cortical cultures during development. *Neuroscience*, 165 (3): 692-704, 2010.
- J13. Pasquale, V; Massobrio, P; **Bologna, L.L.**; Chiappalone, M and Martinoia, S. Self-organization and neuronal avalanches in networks of dissociated cortical neurons. *Neuroscience*, 153 (4): 1354-1369, 2008.

Peer-reviewed conferences

- C1. **Bologna, L.L.***; Pinoteau, J.*; Garrido, J. and Arleo, A. Active tactile sensing in a neurorobotic Braille-reading system. In *Proceedings of the 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2012)*, pages 1925-1930, Rome, Italy, 2012 (*equal contribution).
- C2. Pinoteau, J.*; **Bologna, L.L.***; Garrido, J. and Arleo, A. A Closed-loop neurorobotic system for investigating Braille-reading finger kinematics. In Isokoski, P. and Springare, J., editors, *LNCS - Haptics: Perception, Devices, Mobility, and Communication*, vol. 7282, pages 407-418, Springer, 2012 (*equal contribution).
- C3. **Bologna, L. L.**; Brasselet, R.; Maggiali, M. and Arleo, A. Effective encoding/decoding of spiking signals from an artificial touch sensor. In Gervais, R. et al., editors, *Proceedings of the Fifth french conference on computational neuroscience (Neurocomp)*, pages 120-125, 2010.
- C4. **Bologna, L. L.**; Brasselet, R.; Maggiali, M. and Arleo, A. Neuromimetic encoding/decoding of spatiotemporal spiking from an artificial touch sensor. In *Proceedings of the International Joint Conference on Neural Networks (IJCNN)* (in press), 2010.

Abstracts/Posters

- P1. Migliore R; Lupascu C. A.; **Bologna L.L.**; Romani A.; Courcol JD; Van Geit W; Thomson AM; Mercer A; Lange S; Rössert CA; Shi Y; Hagens O; Pezzoli M; Freund T; Muller E; Schuermann F; Markram H; Migliore M; Antonel S; Falck J; Kali S (2019) Degeneracy in hippocampal CA1 neurons. In *CNS (Computational Neuroscience) 2019, Barcellona, Spain*.
- P2. Vitale P; Lupascu C.A.; **Bologna L.L.**; Shah M; Romani A; Courcol JD; Antonel S; Van Geit W; Shi Y; Budd J.M.L, Gulyas A; Kali S; Migliore M; Migliore R; Pezzoli M; Sáráy S; Tar L; Schlingloff D; Berki P; Freund T.F. (2019) Data-driven modeling of

mouse CA1 and DG neurons. In *CNS (Computational Neuroscience) 2019, Barcellona, Spain*.

- P3. **Bologna L.L.**; Lupascu C.A.; Migliore R.; Courcol J-D.; Schürmann F.; Davison A.P.; Migliore M. (2018) The Brain Simulation Platform of the Human Brain Project - v2.0: building brain models in a collaborative environment. In *SfN (Society of Neuroscience) 2018, San Diego, USA*
- P4. Bécu M; Tatur G; Sheynikhovich D; Agathos C; **Bologna L.L.**; Arleo A (2018) Age-related preference for geometric cues during real-world navigation. In *Poster presented at Forum of Neuroscience (FENS), Berlin, Germany, pages 345*.
- P5. Lupascu C.A.; **Bologna L.L.**; Migliore R.; Antonel S. M.; Courcol J-D.; Migliore M. (2017) A user-friendly interactive pipeline for single cell model building. In *SfN (Society of Neuroscience) 2017, Washington, USA*
- P6. Romani R.; Antille N.; **Bologna L. L.**; Courcol J.-D.; Devresse A.; Ecker A.; Falck J. H.; Favreau C. P.; Gevaert M.; Gulyas A.; Hernando J. V.; Jimenez S.; Kali S.; Kanari L.; King J. G.; Lange S.; Lupascu C.A.; Mercer A.; Migliore M.; Migliore R.; Povolotskiy A.; Ramaswamy S.; Reimann M. W.; Rossert C. A.; Shi Y.; Thomson A. M.; Van Geit W.; Vanherpe L.; Markram H.; Muller E. B. (2017) Reconstruction and simulation of a full-scale model of rat hippocampus CA1 In *SfN (Society of Neuroscience) 2017, Washington, USA*
- P7. Bécu M.; Tatur G.; Bourefis A.; **Bologna L.L.**; Sheynikhovich D.; Arleo A. (2017) Age-related changes in gaze dynamics during real-world navigation. In *Journal of Vision, vol. 17(10), pages 540*.
- P8. Migliore M.; Lupascu C.A.; Morabito A.; Merenda E.; Marinelli S.; Marchetti C.; Migliore R.; **Bologna L.L.**; Franchina F.; Cherubini E. (2016) An automatic pipeline to optimize subcellular models of transynaptic signaling at inhibitory synapses In *SfN (Society of Neuroscience) 2016, San Diego, USA*
- P9. Arleo, A.; Basselet, R.; **Bologna, L.L.**; Pinoteau, J.; Jörntell, H. and Johansson, R. S. (2011) Neural coding in the early stages of the somatosensory pathway: a metrical information theory analysis of human microneurography data. In *Proceedings of the 10th French Society for Neuroscience Meeting, Marseille, France, 2011*.
- P10. Nieuws, T; **Bologna, L.L.** and Martinoia, S. Complex dynamics in neural growth. In *Computational and Systems Neuroscience Meeting, (Cosyne), 24th - 28th, February 2011, Salt Lake City, (Utah, Usa), 2011*.
- P11. **Bologna, L.L.**; Pasquale, V.; Garofalo, M.; Gandolfo, M.; Baljon, P. L.; Maccione, A.; Martinoia, S. and Chiappalone, M. Investigating neuronal activity by SPYCODE data analyzer. In *Proceedings of Mea-Meeting, 7th International Meeting on Substrate Integrated Micro-Electrode Arrays, 29 June - 2 July 2010, Reutlingen (Germany) (in press), 2010*.
- P12. **Bologna, L.L.**; Maggiali, M.; Sandini, G. and Arleo, A. Encoding/Decoding of spatiotemporal signals from an artificial touch sensor. In *Proceedings of the Humanoids Conference, Paris, France, 2009*.
- P13. **Bologna, L. L.**; Nieuws, T. and Martinoia, S. A mixed excitatory/inhibitory model of neural growth reproduces cortical cultures' activity during development. In *Renaud, S. and Saighi, S., editors, Proceedings of the Conference NeuroComp, vol. 4, pages 4, 2009*.
- P14. **Bologna, L. L.**; Chiappalone, M; Tedesco, M; Nieuws, T and Martinoia, S. Constant low frequency stimulation shows long-term response changes in in-vitro cortical cultures during

- development. In *Proceedings of Mea-Meeting, 6th International Meeting on Substrate Integrated Micro-Electrode Arrays*, 8-11 July 2008, Reutlingen (Germany), pag. 43, 2008.
- P15. **Bologna, L.L.**; M; Chiappalone, N.; Nieuwenhuis, T and Martinoia, S. Constant low frequency stimulation shows changes in response of in-vitro cortical cultures during development. In *Molecular Mechanisms in Neuroscience*, 19-20 June 2008, Milan (Italy), 2008.
- P16. Massobrio, P; Pasquale, V; Chiappalone, M; **Bologna, L.L.** and Martinoia, S. Self-organization in network of dissociated cortical neurons: an experimental and modeling approach. In *5th Computational and Systems Neuroscience Meeting, (Cosyne)*, 28th, February - 2nd March, 2008, Salt Lake City, (Utah, Usa), 2008.
- P17. Pasquale, V; Massobrio, P; **Bologna, L.L.**; Chiappalone, M; Maccione, M; Berdondini, L and Martinoia, S. Scale-free dynamics and neuronal avalanches in networks of neurons cultured onto micro-electrode arrays. In *Society For Neuroscience, (Sfn 2008)* -15-19 November 2008, Washington dc (Usa), 2008.
- P18. Pasquale, V; Massobrio, P; Chiappalone, M; **Bologna, L.L.** and Martinoia, S. Self-organization and neuronal avalanches in networks of dissociated cortical neurons, Complexity in Neural Network Dynamics. In *Tauc Conference In Neurobiology 2007*, 13-14 December 2007, Gif-sur-Yvette (France), 2007.