

Publications

Journal Papers

1. Toselli, B., Tortora, D., Severino, M, Arnulfo, G, **Canessa, A.**, Morana, G., Rossi, A., Fato, M. M. Improvement of white matter tract reconstruction with constrained spherical deconvolution and trackdensity mapping in low angular resolution data: a pediatric study and literature review (2017) *Frontiers in Pediatrics*, 5, DOI: 10.3389/fped.2017.00182
2. **Canessa, A.**, Gibaldi, A., Chessa, M., Fato, M., Solari, F., Sabatini, S.P. A dataset of stereoscopic images and ground-truth disparity mimicking human fixations in peripersonal space (2017) *Scientific Data*, 4, art. no. 170034. DOI: 10.1038/sdata.2017.34
3. Gibaldi, A., **Canessa, A.**, Sabatini, S.P. The active side of stereopsis: Fixation strategy and adaptation to natural environments (2017) *Scientific Reports*, 7, art. no. 44800. DOI: 10.1038/srep44800
4. Nelson, A.B., Moiselto, C., Lin, J., Panday, P., Ricci, S., **Canessa, A.**, Di Rocco, A., Quartarone, A., Frazzitta, G., Isaias, I.U., Tononi, G., Cirelli, C., Ghilardi, M.F. Beta oscillatory changes and retention of motor skills during practice in healthy subjects and in patients with Parkinson's disease (2017) *Frontiers in Human Neuroscience*, 11, art. no. 104. DOI: 10.3389/fnhum.2017.00104
5. Narizzano, M., Arnulfo, G., Ricci, S., Toselli, B., Tisdall, M., **Canessa, A.**, Fato, M.M., Cardinale, F. SEEG assistant: A 3DSlicer extension to support epilepsy surgery (2017) *BMC Bioinformatics*, 18 (1), art. no. 124. DOI: 10.1186/s12859-017-1545-8
6. Gibaldi, A., Vanegas, M., **Canessa, A.**, Sabatini, S.P. A Portable Bio-Inspired Architecture for Efficient Robotic Vergence Control (2017) *International Journal of Computer Vision*, 121 (2), pp. 281-302. DOI: 10.1007/s11263-016-0936-z
7. **Canessa, A.**, Pozzi, N.G., Arnulfo, G., Brumberg, J., Reich, M.M., Pezzoli, G., Ghilardi, M.F., Matthies, C., Steigerwald, F., Volkman, J., Isaias, I.U. Striatal dopaminergic innervation regulates subthalamic beta-oscillations and cortical-subcortical coupling during movements: Preliminary evidence in subjects with Parkinson's disease (2016) *Frontiers in Human Neuroscience*, 10 (DEC2016), art. no. 611. DOI: 10.3389/fnhum.2016.00611
8. Pozzi, N.G., Arnulfo, G., **Canessa, A.**, Steigerwald, F., Nickl, R., Homola, G.A., Fato, M.M., Matthies, C., Pacchetti, C., Volkman, J., Isaias, I.U. Distinctive neuronal firing patterns in subterritories of the subthalamic nucleus (2016) *Clinical Neurophysiology*, 127 (11), pp. 3387-3393. DOI: 10.1016/j.clinph.2016.09.004
9. Gibaldi, A., **Canessa, A.**, Solari, F., Sabatini, S.P. Autonomous learning of disparity-vergence behavior through distributed coding and population reward: Basic mechanisms and real-world conditioning on a robot stereo head (2015) *Robotics and Autonomous Systems*, 71, art. no. 2430, pp. 23-34. DOI: 10.1016/j.robot.2015.01.002
10. **Canessa, A.**, Chessa, M., Gibaldi, A., Sabatini, S.P., Solari, F. Calibrated depth and color cameras for accurate 3D interaction in a stereoscopic augmented reality environment (2014) *Journal of Visual Communication and Image Representation*, 25 (1), pp. 227-237. DOI: 10.1016/j.jvcir.2013.02.011

11. Antonelli, M., Gibaldi, A., Beuth, F., Duran, A.J., **Canessa, A.**, Chessa, M., Solari, F., Del Pobil, A.P., Hamker, F., Chinellato, E., Sabatini, S.P. A hierarchical system for a distributed representation of the peripersonal space of a humanoid robot (2014) *IEEE Transactions on Autonomous Mental Development*, 6 (4), art. no. 6844843, pp. 259-273. DOI: 10.1109/TAMD.2014.2332875
12. Gibaldi, A., Chessa, M., **Canessa, A.**, Sabatini, S.P., Solari, F. A cortical model for binocular vergence control without explicit calculation of disparity (2010) *Neurocomputing*, 73 (7-9), pp. 1065-1073. DOI: 10.1016/j.neucom.2009.11.016

Book chapters

1. Chessa, M., Garibotti, M., **Canessa, A.**, Gibaldi, A., Sabatini, S.P., Solari, F. Veridical perception of 3D objects in a dynamic stereoscopic augmented reality system (2013) *Communications in Computer and Information Science. Theory and Application*. G. Csurka et al. (Eds.)
2. **Canessa, A.**, Gibaldi, A., Chessa, M., Sabatini, S.P., Solari, F. *The Perspective Geometry of the Eye: Toward Image-Based Eye-Tracking* (2012) *Human-Centric Machine Vision*, ISBN: 978-953-51-0563-3.
3. Sabatini, S.P., Solari, F., **Canessa, A.**, Chessa, M., Gibaldi, A. Early perception-action cycles in binocular vision: Visuomotor paradigms and cortical-like architectures (2012) *Developing and Applying Biologically-Inspired Vision Systems: Interdisciplinary Concepts*, pp. 154-182. DOI: 10.4018/978-1-4666-2539-6.ch007

Published Conference Proceedings

1. Kalou, K., Gibaldi, A., **Canessa, A.**, Sabatini, S.P. Learning a compositional hierarchy of disparity descriptors for 3D orientation estimation in an active fixation setting. 26th International Conference on Artificial Neural Networks, ICANN 2017, Alghero, Italy; 11-14 September 2017. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 10614 LNCS, 2017, pp. 192-199, DOI: 10.1007/978-3-319-68612-7_22
2. Arnulfo, G., **Canessa, A.**, Steigerwald, F., Pozzi, N.G., Volkmann, J., Massobrio, P., Martinoia, S., Isaias, I.U. Characterization of the spiking and bursting activity of the subthalamic nucleus in patients with Parkinson's disease (2015) 2015 International Conference on Advances in Biomedical Engineering, ICABME 2015, art. no. 7323263, pp. 107-110. DOI: 10.1109/ICABME.2015.7323263
3. Freina, L., **Canessa, A.** Immersive vs desktop virtual reality in game based learning (2015) *Proceedings of the European Conference on Games-based Learning*, 2015-January, pp. 195-202.
4. Gibaldi, A., **Canessa, A.**, Sabatini, S.P. Vergence control learning through real V1 disparity tuning curves (2015) International IEEE/EMBS Conference on Neural Engineering, NER, 2015-July, art. no. 7146627, pp. 332-335. DOI: 10.1109/NER.2015.7146627
5. Bottino, R.M., **Canessa, A.**, Ott, M., Tavella, M. SMART VIEW: A serious game supporting spatial orientation of subjects with cognitive impairments (2014) *Lecture Notes in Computer Science (including*

subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 8514 LNCS (PART 2), pp. 489-500. DOI: 10.1007/978-3-319-07440-5_45

6. Gibaldi, A., **Canessa, A.**, Chessa, M., Solari, F., Sabatini, S.P. Population coding for a reward-modulated Hebbian learning of vergence control (2013) Proceedings of the International Joint Conference on Neural Networks, art. no. 6706821. DOI: 10.1109/IJCNN.2013.6706821
7. Chessa, M., Garibotti, M., **Canessa, A.**, Gibaldi, A., Sabatini, S.P., Solari, F. Veridical Perception of 3D Objects in a Dynamic Stereoscopic Augmented Reality System (2013) Communications in Computer and Information Science, 359 CCIS, pp. 274-285. DOI: 10.1007/978-3-642-38241-3_18
8. Gibaldi, A., **Canessa, A.**, Chessa, M., Solari, F., Sabatini, S.P. A neural model for coordinated control of horizontal and vertical alignment of the eyes in three-dimensional space (2012) Proceedings of the IEEE RAS and EMBS International Conference on Biomedical Robotics and Biomechanics, art. no. 6290812, pp. 955-960. DOI: 10.1109/BioRob.2012.6290812
9. Chessa, M., Garibotti, M., **Canessa, A.**, Gibaldi, A., Sabatini, S.P., Solari, F. A stereoscopic augmented reality system for the veridical perception of the 3D scene layout (2012) VISAPP 2012 - Proceedings of the International Conference on Computer Vision Theory and Applications, 2, pp. 15-23.
10. Gibaldi, A., **Canessa, A.**, Chessa, M., Solari, F., Sabatini, S.P. How a population-based representation of binocular visual signal can intrinsically mediate autonomous learning of vergence control (2012) Procedia Computer Science, 13, pp. 212-221. DOI: 10.1016/j.procs.2012.09.131
11. Gibaldi, A., **Canessa, A.**, Chessa, M., Sabatini, S.P., Solari, F. A neuromorphic control module for real-time vergence eye movements on the iCub robot head (2011) IEEE-RAS International Conference on Humanoid Robots, art. no. 6100861, pp. 543-550. DOI: 10.1109/Humanoids.2011.6100861
12. Maiello, G., Silvestro, C., **Canessa, A.**, Chessa, M., Gibaldi, A., Sabatini, S.P., Solari, F. Assessment of stereoscopic depth perception in augmented reality environments based on low-cost technologies (2011) Proceedings - APGV 2011: ACM SIGGRAPH Symposium on Applied Perception in Graphics and Visualization, p. 111. DOI: 10.1145/2077451.2077474
13. Gibaldi, A., Chessa, M., **Canessa, A.**, Sabatini, S.P., Solari, F. A neural model for binocular vergence control without explicit calculation of disparity (2009) ESANN 2009 Proceedings, 17th European Symposium on Artificial Neural Networks - Advances in Computational Intelligence and Learning, pp. 293-298
14. Breveglieri, R., Bosco, A., **Canessa, A.**, Fattori, P., Sabatini, S.P. Evidence for peak-shaped gaze fields in area V6A: Implications for sensorimotor transformations in reaching tasks (2009) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 5602 LNCS (PART 2), pp. 324-333. DOI: 10.1007/978-3-642-02267-8_35