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Employment

2018 March – current, Team Leader (Assistant Professor)
Center for Brain Science, RIKEN Wakoshi, JP

2013 Sept – 2018 March, Team Leader (Assistant Professor)
Brain Science Institute, RIKEN Wakoshi, JP

2008 – 2013, Senior Research Associate
UCL Institute of Ophthalmology, University College London London, UK

2005 – 2008, Research Associate
2003 – 2005, Postdoctoral Fellow
Smith-Kettlewell Eye Research Institute San Francisco, US

2000, Research Assistant
Universita` di Padova Padua, IT

Affiliations

2013–current, Honorary Senior Lecturer
University College London London, UK

2019–current, Adjunct Professor
University of Tokyo, Graduate School of Information Science and Technology Tokyo, JP

Education

INSTITUTE OF NEUROINFORMATICS, UNIVERSITY OF ZÜRICH/ETH Zürich, CH
Ph.D., Neuroscience, 2003

INTERNATIONAL SCHOOL FOR ADVANCED STUDIES Trieste, IT
M.S., Computational Neuroscience, 1998 – 99

UNIVERSITA` DI PADOVA Padua, IT
B.S., Physics, 1999

IMPERIAL COLLEGE London, UK
Undergraduate, Biophysics, 1996 – 97

UNIVERSITY OF CALIFORNIA SAN DIEGO San Diego, US
Undergraduate, Biophysics, 1995

LICEO STATALE E. CURIEL Padua, IT

High school degree, 1993

Teaching

2015 – 2018, Neurobiology of Vision, BSI Training Program	RIKEN BSI, JP
2013, MSc Biology of Vision	University College London, UK
2010 – 2013, PhD student co-supervisor	University College London, UK
2003, Teaching Assistant, <i>Electromagnetism and General Relativity</i>	Uni/ETH Zürich, CH
2002, 2003, Student Supervisor, <i>Programming in NEURON</i>	Uni/ETH Zürich, CH
2002, Teaching Assistant, <i>Mechanics and Thermodynamics</i>	Uni/ETH Zürich, CH

Peer-reviewed publications

D. Lyamzin, **A. Benucci**. The mouse posterior parietal cortex: Anatomy and functions. *Neurosci. Res.*, Nov 20; S0168-0102(18)30610-2 (2018)

R. Aoki, T. Tsubota, Y. Goya, **A. Benucci**. An Automated Platform for High-Throughput Mouse Behavior and Physiology with Voluntary Head-fixation. *Nature Comms.* 8(1):1196 (2017)

M.A.Pisauro, **A. Benucci**, M. Carandini. Local and global contributions to hemodynamic activity in mouse cortex. *J Neurophysiol.*, Mar 16; 00125.2016, (2016)

D. Zoccolan, D. Cox, **A. Benucci**. What can simple brains teach us about how vision works. *Front. Neural Circuits*, Sep 29; 9:51, (2015)

L. Madisen... **A. Benucci**... H. Zeng. Transgenic mice for intersectional targeting of neural sensors and effectors with high specificity and performance. *Neuron*, Mar 4;85(5):942-58, (2015)

M. Carandini, D. Shimaoka, L.F. Rossi, T. Sato, **A. Benucci**, T. Knöpfel. Imaging the awake visual cortex with a genetically encoded voltage indicator. *J Neurosci.* Jan 7;35(1):53-63, (2015)

M.L. Schölvinck, A.B. Saleem, **A. Benucci**, Harris K.D., M. Carandini. Cortical state determines global variability and correlations in visual cortex. *J Neurosci.* Jan 7;35(1):170-8, (2015)

A.F. Pisauro, M. Carandini, **A. Benucci**. The hemodynamic response in visual cortex of the awake mouse. *J Neurosci.* Nov 13;33(46) 18343-51, (2013)

A. Benucci, A.B. Saleem, M. Carandini. Adaptation maintains population homeostasis in primary visual cortex. *Nature Neuroscience*, Jun 16(6):724:9, (2013)

M. Okun, P. Yger, S. Marguet, F. Gerard-Mercier, **A. Benucci**, S. Katzner, L. Busse, M. Carandini, K. Harris. Population rate dynamics and multineuron firing patterns in sensory cortex. *J. Neurosci.* Nov 28; 32(48):17108-19, (2012)

R.A. Pearson, A.C. Barber, M. Rizzi, T. Xue, E.L. West, Y. Duran, A.J. Smith, J.Z. Chuang, S.A. Azam, U.F.O. Luhmann, **A. Benucci**, C.H. Sung, M. Carandini, K.W. Yau, J.C. Sowden, R.R. Ali. Restoration of vision following transplantation of photoreceptors. *Nature*, 485(7396):99-103, (2012)

A. Benucci, D.L. Ringach, M. Carandini. Coding of stimulus sequences by population responses in visual cortex. *Nature Neuroscience*, 12(10):1317-24 (2009)

S. Katzner, I. Nauhaus, **A. Benucci**, et al., Local origin of field potentials in visual cortex. *Neuron*, 61, 35-41 (2009)

I. Nauhaus, **A. Benucci**, M. Carandini, D. L. Ringach. Neuronal selectivity and local map structure in visual cortex, *Neuron*, 57(5):673-9 (2008)

A. Benucci, R.A. Frazor, M. Carandini. Standing waves and traveling waves distinguish two circuits in visual cortex. *Neuron*, 55(1):103-17 (2007)

A. Benucci, P.F.M.J. Verschure, P. König. Dynamical features of high-order correlation events: impact on cortical cells. *Cognitive Neurodynamics*, 10.1007/s11571 (2006)

A. Benucci, P.F.M.J. Verschure, P. König. High-order correlation events in cortical networks: a lower bound. *Phys Rev. E*, 70(5 Pt 1):051909 (2004)

A. Benucci, P.F.M.J. Verschure, P. König. Two-state membrane potential fluctuations driven by weak pairwise correlations. *Neural Computation*, 16(11):2351-78 (2004)

A. Benucci, P.F.M.J. Verschure, P. König. Existence of Higher-Order Correlations in Cortical Activity. *Phys Rev. E*, 68(4 Pt 1):041905 (2003)

Book Chapters

R.A. Frazor, **A. Benucci**, M. Carandini. Independent encoding of position and orientation by population responses in primary visual cortex. Proceedings of the 2nd international conference on Advances in brain, vision and artificial intelligence. ISBN 3540-75554-3, pp: 30-41, Springer-Verlag (2007)

Patents

Restraining system for mice with voluntary head fixation. JP (2016)
US approval pending (2017)