

George Kastellakis

Founder, Ignimedia EE

Post-doctoral Researcher, Computational Biology Lab, IMBB/FORTH

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EDUCATION

2016

Ph.D., Computational Neuroscience

Computational Biology Lab, FORTH & Dept. of Biology/University Of Crete

Thesis: "*Dendritic contributions to neuronal and synaptic memory allocation*"

Advisor: Dr. Panayiota Poirazi

2009

Master's Degree, Brain and Mind Sciences

Faculty of Medicine, University of Crete, Greece

2004

B.Sc., Physics

Department of Physics, University of Crete, Greece

POSTGRADUATE COURSES

HP-SEE Training course on Parallel Computing (2011). HP-SEE Regional Training Meeting, Sofia, Bulgaria

EMBO/FENS Course on Molecular and Cellular Cognition, Molecular and Cellular Cognition Society 2010, Venice, Italy

Quantum Optics and Information Physics Summer School (2006). Physics Department, University of Crete/FORTH, Heraklion Greece

Lab Rotation: Modeling grasping movements with Restricted Boltzmann Machines (2009) Computation Vision and Robotics Lab, ICS/ FORTH, Greece

Lab Rotation: Multi-Objective Parameter Optimization of Compartmental Neuronal Models (2009) Computational Biology Lab, IMBB/FORTH, Greece

PUBLICATIONS

Articles

Tzilivaki A., Kastellakis G., Poirazi P. *Challenging the point neuron dogma: FS basket cells as 2-stage nonlinear integrators*. Nat Commun, 2019 Aug 14 | DOI: <https://doi.org/10.1038/s41467-019-11537-7>

Kastellakis G. & Poirazi P. *Synaptic Clustering and Memory Formation*. Front. Mol. Neurosci., 2019 Dec 6 | <https://doi.org/10.3389/fnmol.2019.00300>

Frank, A., Huang, S., Zhou, M., Gdalyahu, A., Kastellakis, G., Poirazi, P., Silva, A. (2018). *Hotspots of Dendritic Spine Turnover Facilitate Clustered Spine Addition and Learning and Memory*. Nature Communications, 9.1 (2018): 42

Panayiota Poirazi, George Kastellakis ...*with Love, from Post to Pre Neuron*. 2017 September | DOI: 10.1016/j.neuron.2017.09.022

Papoutsis A., Kastellakis G., Poirazi P. (2017) *Basal tree complexity shapes functional pathways in the prefrontal cortex* Journal of Neurophysiology, 2017 Jul

Kastellakis, G., Silva, A. J., Poirazi, P. (2016) *Linking Memories across Time via Neuronal and Dendritic Overlaps in Model Neurons with Active Dendrites*. Cell Reports, 17(6), 1491-1504.

Kastellakis, G., Cai, D.J., Mednick, S.C., Silva, A.J., Poirazi, P. (2015) *Synaptic clustering within dendrites: An emerging theory of memory formation*. Prog Neurobiol. 2015 Mar; 126:19-35.

Papoutsis A., Kastellakis G., Psarrou M., Anastasakis S., Poirazi P. (2013) *Coding and Decoding with Dendrites*. Special Issue of Journal of Physiology Paris

Book Chapters

Kastellakis G., Poirazi P. (2013) *Cellular and Dendritic Memory Allocation in Dendritic Computations Through Morphology and Connectivity*. (Springer) (ed. B. Torben-Nielsen)

Stefanou S. , Kastellakis G. and Poirazi P. (2016) *Creating and constraining compartmental models of neurons using experimental data*. In Patch Clamp Analysis: advanced techniques, third edition. Edited by Alon Korngreen, Springer, New York

CONFERENCES & LECTURES

Invited Lecture

Linking memories across time via excitability and synaptic tagging. Neuroplasticity: From Bench to Machine Learning Workshop (2018). University of Surrey

Refereed Conference Paper

E. Kousanakis, A. Dollas, E. Sotiriades, I. Papaefstathiou, D. Pnevmatikatos, A. Papoutsis, P. Petrantonakis, P. Poirazi, S. Chavlis and G. Kastellakis (2017) *An Architecture for the Acceleration of a*

hybrid Leaky Integrate and Fire SNN on the Convey HC-2ex FPGA-Based Processor The 25th IEEE International Symposium on Field-Programmable Custom Computing Machines 2017, Napa, CA, USA

Workshop

Overview of neuronal simulation tools. DENDRITES 2014 Training Workshop on Dendrites

PAST EMPLOYMENT

2016- : *Post-doctoral fellow*, Computational Biology Lab, IMBB/FORTH

2008- : *Co-Founder*, Ignimedia EE, Greece

2006-2008: *Software Engineer*, Communications and Networking Center (UCNet), Greece

2001-2006: *Software Engineer*, Phaistos Networks S.A., Greece

LANGUAGES

Greek (Native), English (Fluent, CPE) , French (Basic)

MEMBERSHIPS

Society For Neuroscience

Hellenic Society for Neuroscience

Chamber of Commerce and Industry, Heraklion