

## Preprints

- [1] M. Topalidou, D. Kase, T. Boraud, and N. P. Rougier. “Dissociation of reinforcement and Hebbian learning induces covert acquisition of values in the basal ganglia”. In: *BioRxiv* (2016).

## Journals

- [2] O. Guest and N. P. Rougier. “What is computational reproducibility?” In: *IEEE CDS Newsletter* 13.1 (2016).
- [3] C. Piron, D. Kase, M. Topalidou, M. Goillandeau, N. P. Rougier, and T. Boraud. “The globus pallidus pars interna in goal-oriented and routine behaviors: Resolving a long-standing paradox”. In: *Movement Disorders* (2016).
- [4] W. Taouali, L. Goffart, F. Alexandre, and N. P. Rougier. “A parsimonious computational model of visual target position encoding in the superior colliculus”. In: *Biological Cybernetics* 109.4-5 (2015).
- [5] M. Topalidou, A. Leblois, T. Boraud, and N. P. Rougier. “A Long Journey into Reproducible Computational Neuroscience”. In: *Frontiers in Computational Neuroscience* 9.28 (2015). ★ Frontiers highlight ★.
- [6] M. Topalidou and N. P. Rougier. “[Re] Interaction between cognitive and motor cortico-basal ganglia loops during decision making: a computational study”. In: *ReScience* 1.1 (2015).
- [7] G. Detorakis and N. P. Rougier. “Structure of Receptive Fields in a Computational Model of Area 3b of Primary Sensory Cortex”. In: *Frontiers in Computational Neuroscience* (2014).
- [8] N. P. Rougier. “Antialiased 2D Grid, Marker, and Arrow Shaders”. In: *Journal of Computer Graphics Techniques (JCGT)* 3.4 (2014), pp. 1–52.
- [9] N. P. Rougier, M. Droettboom, and P. E. Bourne. “Ten Simple Rules for Better Figures”. In: *PLoS Computational Biology* 10.9 (2014). ★ Nature highlight ★.
- [10] N. P. Rougier. “Higher Quality 2D Text Rendering”. In: *Journal of Computer Graphics Techniques (JCGT)* 2.1 (2013), pp. 50–64.
- [11] N. P. Rougier. “Shader-based Antialiased Dashed Stroke Poylines”. In: *Journal of Computer Graphics Techniques (JCGT)* 2.2 (2013), pp. 105–121.
- [12] G. I. Detorakis and N. P. Rougier. “A Neural Field Model of the Somatosensory Cortex: Formation, Maintenance and Reorganization of Ordered Topographic Maps”. In: *PLoS ONE* 7.7 (2012), e40257.
- [13] N. P. Rougier and J. Fix. “DANA: Distributed numerical and adaptive modelling framework”. In: *Network: Computation in Neural Systems* 23.4 (2012), pp. 237–253.
- [14] J. Fix, N. P. Rougier, and F. Alexandre. “A Dynamic Neural Field Approach to the Covert and Overt Deployment of Spatial Attention”. In: *Cognitive Computation* 3.1 (2011), pp. 279–293.
- [15] N. P. Rougier and Y. Boniface. “Dynamic Self-Organising map”. In: *Neurocomputing* 74.11 (2011), pp. 1840–1847.
- [16] N. P. Rougier and A. Hutt. “Synchronous and Asynchronous Evaluation of Dynamic Neural Fields”. In: *Journal of Difference Equations and Applications* 17.8 (2011).
- [17] W. Taouali, T. Viville, N. P. Rougier, and F. Alexandre. “No Clock to Rule Them All”. In: *Journal Of Neurophysiology, Paris* 105.1–3 (2011).
- [18] A. Hutt and N. P. Rougier. “Activity spread and breathers induced by finite transmission speeds in two-dimensional neural fields”. In: *Physical Review E* 82.5 (2010). Also in the virtual journal of biological research 20(10), 2010.
- [19] N. P. Rougier. “Implicit and Explicit Representations”. In: *Neural Networks* 22.2 (2009), pp. 155–160.
- [20] J. Fix, N. P. Rougier, and F. Alexandre. “From physiological principles to computational models of the cortex”. In: *Journal of Physiology, Paris* (2007), pp. 32–39.
- [21] N. P. Rougier. “Dynamic Neural Field with Local Inhibition”. In: *Biological Cybernetics* 94.3 (2006), pp. 169–179.
- [22] N. P. Rougier and J. Vitay. “Emergence of Attention within a Neural Population”. In: *Neural Networks* 19.5 (2006), pp. 573–581.

- [23] N. P. Rougier, D. C. Noelle, T. D. Braver, J. D. Cohen, and R. C. O'Reilly. "Prefrontal Cortex and Flexible Cognitive Control: Rules Without Symbols". In: *Proceedings of the National Academy of Science* 102.20 (2005), pp. 7338–7343.
- [24] N. P. Rougier and R. C. O'Reilly. "A Gated Prefrontal Cortex Model of Dynamic Task Switching". In: *Cognitive Science* 26.4 (2002), pp. 503–520.

## Monographs

- [25] N. P. Rougier. *From Python to Numpy*. Zenodo, 2016.
- [26] G. Varoquaux, E. Gouillart, O. Vahtras, V. Haenel, N. P. Rougier, R. Gommers, F. Pedregosa, Z. Jedrzejewski-Szmek, P. Virtanen, C. Combelles, D. Pinte, R. Cimrman, A. Espaze, A. Chauve, and C. Burns. *Scipy Lecture Notes*. Zenodo, 2015.
- [27] N. P. Rougier. "Fondements biologiques pour le calcul distribu, numrique et adaptatif". Habilitation. Universit Nancy II, May 2011.
- [28] N. P. Rougier. "Modles de mmoires pour la navigation autonome". PhD thesis. Universit Henri Poincar - Nancy I, Oct. 2000.

## Book chapters

- [29] A. Hutt and N. P. Rougier. "Numerical simulation scheme of one-and two-dimensional neural fields involving space-dependent delays". In: *Neural Field Theory*. Ed. by P. beim Graben, S. Coombes, R. Potthast, and J. Wright. Springer, 2014.
- [30] N. P. Rougier and G. I. Detorakis. "Self-Organizing Dynamic Neural Fields". In: *Advances in Cognitive Neurodynamics (III)*. Ed. by Y. Yamaguchi. Springer, 2013.
- [31] W. Taouali, N. P. Rougier, and F. Alexandre. "Visual Target Selection Emerges from a Bio-inspired Network Topology". In: *Computational Intelligence*. Ed. by K. Kurosh Madani, A. Correia, A. Rosa, and J. Filipe. Springer-Verlag, 2012.
- [32] J. Fix, J. Vitay, and N. P. Rougier. "A Computational Model of Spatial Memory Anticipation during Visual Search". In: *Anticipatory Behavior in Adaptive Learning Systems: From Brains to Individual and Social Behavior*. Ed. by M. Butz, O. Sigaud, G. Pezzulo, and G. Baldassarre. Springer-Verlag Berlin Heidelberg, 2007.
- [33] J. Vitay, N. P. Rougier, and F. Alexandre. "A distributed model of visual spatial attention". In: *Biomimetic Neural Learning for Intelligent Robotics*. Ed. by S. Wermter, G. Palm, and M. Elshaw. Springer-Verlag, 2005.
- [34] H. Frezza-Buet, N. P. Rougier, and F. Alexandre. "A cerebral framework for the integration of biologically inspired temporal mechanisms for sequence processing". In: *Neural, symbolic and Reinforcement methods for sequence learning*. Ed. by L. Giles and R. Sun. Springer, 2000.
- [35] N. P. Rougier. "Mmoires dclarative et procdurale pour la navigation autonome d'un animat". In: *Intelligence artificielle situe. Cerveau, corps et environnement*. Ed. by A. Drogoul and J. Meyer. Herms, 1999.

## Conference

- [36] B. T. Nallapu, N. P. Rougier, and B. R. Surampudi. "The art of scaling up : a computational account on action selection in basal ganglia". In: *3rd Annual Conference of the Association for Cognitive Science, India*. 2016.
- [37] B. T. Nallapu and N. P. Rougier. "Dynamics of reward based decision making a computational study". In: *ICANN*. 2016.
- [38] L. Campagnola, A. Klein, C. Rossant, and N. P. Rougier. "VisPy: Harnessing The GPU For Fast, High-Level Visualization". In: *Scipy, USA*. 2015.
- [39] K. Hinsén and N. P. Rougier. "The ReScience initiative". In: *Euroscipy*. 2015.
- [40] B. T. Nallapu, B. R. Surampudi, and N. P. Rougier. "Factors affecting reward based decision making : a computational study". In: *CBC, India*. 2015.

- [41] N. P. Rougier. “Glumpy”. In: *Euroscipy, (best poster)*. 2015.
- [42] M. Topalidou, D. Kase, T. Boraud, and N. P. Rougier. “The Formation of habits”. In: *CNS, Prague*. 2015.
- [43] M. Topalidou, C. Piron, D. Kase, T. Boraud, and N. P. Rougier. “The Formation of habits”. In: *SBDM, Paris*. 2015.
- [44] M. Topalidou, C. Piron, D. Kase, T. Boraud, and N. P. Rougier. “The Formation of Habits: implicit supervision of the basal ganglia”. In: *RLDM, Canada*. 2015.
- [45] N. P. Rougier. “Modern Scientific Visualization”. In: *X Developer’s Conference*. 2014.
- [46] L. Campagnola, A. Klein, C. Rossant, and N. P. Rougier. “Vispy – a future tool for interactive visualization”. In: *BI Forum*. 2013.
- [47] L. Campagnola, A. Klein, C. Rossant, and N. P. Rougier. “Vispy: A Modern and Interactive Visualization Framework”. In: *Euroscipy*. 2013.
- [48] G. I. Detorakis and N. P. Rougier. “Skin Topographic Maps in SI”. In: *Progress in Neural Field Theory*. 2012.
- [49] N. P. Rougier and G. I. Detorakis. “Self-Organizing Dynamic Neural Fields”. In: *Third International Conference on Cognitive Neurodynamics*. 2011.
- [50] N. P. Rougier and J. Fix. “Distributed, Numerical, Asynchronous and Adaptive computing framework”. In: *Python in Neuroscience, EuroScipy satellite*. 2011.
- [51] N. P. Rougier. “DANA”. In: *EuroScipy*. 2010.
- [52] N. P. Rougier. “From Computational Neuroscience to Cellular Automata”. In: *Automata*. 2010.
- [53] W. Taouali, N. P. Rougier, and A. Frdric. “Saccades generation : from the visual input to the superior colliculus”. In: *International Conference on Neural Computation ICNC*. 2010.
- [54] W. Taouali, A. Frdric, A. Hutt, and N. P. Rougier. “Asynchronous Evaluation as an Efficient and Natural Way to Compute Neural Networks”. In: *7th International Conference of Numerical Analysis and Applied Mathematics - ICNAAM*. 2009.
- [55] J. Fix, N. Rougier, and F. Alexandre. “A top-down attentional system scanning multiple targets with saccades”. In: *From Computational Cognitive Neuroscience to Computer Vision*. 2007.
- [56] F. Alexandre, N. P. Rougier, and T. Viville. “A regularization process to implement self-organizing neuronal networks”. In: *International Conference on Engineering and Mathematics*. 2006.
- [57] J. Fix, J. Vitay, and N. Rougier. “A Computational Model of Spatial Memory Anticipation during Visual Search”. In: *Anticipatory Behavior in Adaptive Learning Systems*. 2006.
- [58] J. Vitay and N. P. Rougier. “Using Neural Dynamics to Switch Attention”. In: *International Joint Conference on Neural Networks*. 2005.
- [59] J. Vitay, N. P. Rougier, and F. Alexandre. “Reducing connectivity by using cortical modular bands”. In: *European Symposium on Artificial Neural Networks*. 2004.
- [60] N. P. Rougier. “Hippocampal Auto-Associative Memory”. In: *International Joint Conference on Neural Networks*. 2001.
- [61] N. P. Rougier and F. Alexandre. “A cerebral framework for integrating biologically plausible mechanisms in large connectionist models”. In: *International Conference on Systems in Biology*. 2001.
- [62] N. P. Rougier and F. Alexandre. “A Model of Hippocampal-Cortical Interaction Using a Synaptic Triad Mechanism”. In: *The Nature of Hippocampal-Cortical Interaction: Theoretical and Experimental Perspectives*. 2000.
- [63] N. P. Rougier and F. Alexandre. “Spatial Knowledge Transfer Between Models of Hippocampus and Associative Cortex”. In: *International Joint Conference on Neural Networks*. 1999.
- [64] N. P. Rougier, H. Frezza-Buet, and F. Alexandre. “Neuronal mechanisms for sequence learning in behavioral modeling”. In: *Neural, Symbolic, and Reinforcement Methods for Sequence Learning Workshop, Sixteenth International Joint Conference on Artificial Intelligence*. 1999.

## Science outreach

- [65] N. P. Rougier. “Silicon soul: The vain dream of electronic immortality”. In: *The Conversation (US)* (2016).
- [66] N. P. Rougier. “Visual Attention, Neural Networks and Computational Neuroscience”. In: *Verge of Discovery* (2016).
- [67] N. P. Rougier. “Why you’ll never be able to upload your brain to the cloud”. In: *The Conversation (US)* (2016).
- [68] N. P. Rougier. “3615 EULA”. In: *Binaires* (2015).
- [69] N. P. Rougier. “Esprit in silico : les vains espoirs de l’immortalité”. In: *The Conversation (FR)* (2015).
- [70] N. P. Rougier. “Faut-il avoir peur de l’intelligence artificielle ?” In: *Thinkovery #3* (2015).
- [71] N. P. Rougier. “L’intelligence artificielle, mythes et ralits”. In: *Interstices* (2015).
- [72] N. P. Rougier. “L’intelligence artificielle n’aura pas lieu”. In: *Scilogs* (2015).
- [73] N. P. Rougier. *On ne voit que ce que l’on regarde*. Unith ou Caf, INRIA Bordeaux, France. 2015.
- [74] N. P. Rougier. “Pourquoi l’ide de tlcharger son cerveau n’a pas de sens”. In: *The Conversation (FR)* (2015).
- [75] N. P. Rougier. *Une brve histoire de l’intelligence artificielle*. Pint of Science, Bordeaux, France. 2015.
- [76] N. P. Rougier. *Le rle des corps dans la cognition humaine*. 13me forum des Sciences Cognitives, Paris, France. 2014.
- [77] N. P. Rougier. “Outils et bibliothques de visualisation”. In: *High Performance Computing* (Nov. 2013).
- [78] N. P. Rougier. “Percer les mystres du cerveau”. In: *Interstices* (2013).
- [79] N. P. Rougier. “Petite histoire de la cybercriminalit”. In: *Journe pdagogique pour l’ISN* (2013).
- [80] A. Rousseau, A. Darnaud, B. Goglin, C. Acharian, C. Leininger, C. Godin, C. Holik, C. Kirchner, D. Rives, E. Darquie, E. Kerrien, F. Neyret, F. Massegia, F. Dufour, G. Berry, G. Dowek, H. Robak, H. Xypas, I. Illina, I. Gnaedig, J. Jongwane, J. Ehrel, L. Viennot, L. Guion, L. Calderan, L. Kovacic, M. Collin, M.-A. Enard, M.-H. Comte, M. Quinson, M. Olivi, M. Giraud, M. Dormus, M. Ogouchi, M. Droin, N. Lacaux, N. P. Rougier, N. Roussel, P. Guitton, P. Peterlongo, R.-M. Cornus, S. Vandermeersch, S. Maheo, S. Lefebvre, S. Boldo, T. Viville, V. Poiriel, A. Chabreuil, A. Fischer, C. Farge, C. Vadel, I. Astic, J.-P. Dumont, L. Fjoz, P. Rambert, P. Paradinas, S. De Quatrebarbes, and S. Laurent. *Mdiation Scientifique : une facette de nos mtiers de la recherche*. Tech. rep. 2013.
- [81] N. P. Rougier. “Le modle du cerveau, la pense et le robot”. In: *INRIA website* (2011).
- [82] N. P. Rougier. “Mmoire vive”. In: *Universcit #4* (2011).
- [83] N. P. Rougier and F. Alexandre. “Emergence of Representations Through Interactions of a Robot with the Real World”. In: *ERCIM News* 53 (2003), pp. 22–23.

## Tutorial

- [84] N. P. Rougier. *100 Numpy exercises*. 2015.
- [85] N. P. Rougier. *Numpy Tutorial*. 2015.
- [86] N. P. Rougier. *Matplotlib Tutorial*. 2014.
- [87] N. P. Rougier. *C++ Crash course*. 2011.

## Invited talk

- [88] N. P. Rougier. *Computational Neuroscience: from single neuron to population*. Electromagnetic Fields and the Nervous System: Biological Effects, Biophysical Mechanisms, Methods, and Medical Applications, Erice, Italy. 2016.
- [89] N. P. Rougier. *Open Science*. AdaWeek, Paris, France. 2016.
- [90] N. P. Rougier. *ReScience*. Loi Numrique, et aprs ?, Meudon, France. 2016.
- [91] N. P. Rougier. *ReScience, refaire la science*. Retour d’expriences sur la recherche reproductible, Orleans, France. 2016.

- [92] N. P. Rougier. *Scientific visualization*. Advanced Scientific Programming in Python, Reading, United Kingdom. 2016.
- [93] N. P. Rougier. *Scientific visualization using matplotlib*. Scipy, Austin, Texas, USA. 2016.
- [94] N. P. Rougier. *Two actors, one critic*. Robotique & Neurosciences, Bordeaux, France. 2016.
- [95] N. P. Rougier. *Advanced Neural Fields*. Computational Neuroscience Symposium, Prague, Czech Republic. 2015.
- [96] N. P. Rougier. *Distributed, Asynchronous, Numerical & Adaptive computing: from neurons to behavior*. GDR BioComp workshop, Saint Paul de Vence, France. 2015.
- [97] N. P. Rougier. *From neuron to behavior*. Neuropsychology through the lenses of computational modelling, Birmingham, United Kingdom. 2015.
- [98] N. P. Rougier. *Scientific visualization using matplotlib*. Euroscipy, Cambridge, United Kingdom. 2015.
- [99] N. P. Rougier. *Cortical plasticity*. 6th Computational Neuroscience Network, Marseille, France. 2014.
- [100] N. P. Rougier. *Cortical plasticity, a computational approach*. 3rd International Conference on Neural Field Theory, Reading, United Kingdom. 2014.
- [101] N. P. Rougier. *Cortical plasticity: a neural field approach*. Approaching Cognition from the Computational Neuroscience perspective, satellite workshop of the Bernstein Conference, Gttingen, Germany. 2014.
- [102] N. P. Rougier. *Reinforcement Learning*. Latin-America Summer School in Computational Neuroscience, Valparaíso, Chile. 2014.
- [103] N. P. Rougier. *Plasticité Corticale*. Cerveau et Informatique, Toulouse, France. 2013.
- [104] N. P. Rougier. *Scientific visualization*. PRACE Winter School, Dublin, Ireland. 2013.
- [105] N. P. Rougier. *Scientific visualization using matplotlib*. Euroscipy, Cambridge, United Kingdom. 2013.
- [106] N. P. Rougier. *Visualisation Scientifique*. Journées du développement, Massy-Palaiseau, France. 2013.
- [107] N. P. Rougier. *Where is my mind?* La Robotique et le Vivant, Cergy Pontoise, France. 2013.
- [108] N. P. Rougier. *Dynamic Neural Fields*. Brain & Signals, Institut Elie Cartan, Nancy, France. 2012.
- [109] N. P. Rougier. *Models of Visual Attention*. Intelligence Artificielle Embarquée, Cergy Pontoise, France. 2011.
- [110] N. P. Rougier. *Visual Attention*. Seminar series at the National Institute of Informatics, Tokyo, Japan. 2010.
- [111] N. P. Rougier. *Architecture Cérébrale et Robotique Autonome*. Robots, Hybrides et Corps, Nancy, France. 2009.
- [112] N. P. Rougier. *Visual Attention*. Computational Vision Workshop, Marseille, France. 2008.
- [113] N. P. Rougier. *Some questions around consciousness*. Conceptual Neuroscience, European Institute for Advanced Study in Pure and Applied Mathematics, Wageningen, Netherlands. 2007.
- [114] N. P. Rougier. *Visual Attention*. Models of Language Evolution, Acquisition and Processing, Leuven, Belgium. 2007.
- [115] N. P. Rougier. *Computational Neuroscience for Humanoid robotics*. Japanese-French Frontiers of Science, Kanagawa, Japan. 2006.
- [116] N. P. Rougier. *Rules without symbols*. Computational Models of Active Maintenance in Prefrontal Cortex, Alicante, Spain. 2003.
- [117] N. P. Rougier. *Mémoire Déclarative*. Xèmes Journées Neurosciences et Sciences de l'Ingénieur, Munster, France. 2000.