

Adrian Ernesto Radillo

Mathematics, Neuroscience, Psychology, Machine Learning

*The world is complex and beautiful.
Let's be a part of this!*

Personal Skills

- High level of organization and autonomy
- High level of critical thinking and synthesis
- Great interpersonal skills
- Visionary concerning technologies: I am the lead (self-taught) developer of [IndieK](#) (FOSS)

Research Publications

Theoretical Neuroscience

- 2017 **Radillo, A. E.**, Veliz-Cuba, A., Josić, K., & Kilpatrick, Z. P., *Evidence accumulation and change rate inference in dynamic environments*, Neural Computation, 29(6), 1561-1610.
peer-reviewed We derive an optimal strategy for accumulating evidence in a changing environment, as well as a potential neural network implementation. See [here](#) for a summary.

Clinical Psychology

- 2012 Donard, V., Berget, P., Cramet, M., Gantelmy d'Ille, V., Mörch, C., . . . , **Radillo, A.**, & Virole, B., *Identity and relational stakes in MMORPG*, Pratiques Psychologiques, 18(1), 23-36.
peer-reviewed Psychoanalytic and psychosocial exploration of the impact of Massively Multiplayer Online Role Playing Games on gamers.
- 2010 Virole, B., & **Radillo, A.**, *Cyberpsychologie*, Paris : Dunod.
book Essay on how video games and new technologies in general, affect both the theory and the practice of contemporary clinical psychology.
- 2009 **Radillo, A.**, *L'expérimentation de l'utilisation des jeux vidéo en remédiation cognitive*, Enfance & Psy, n° 44, Paris : Erès.
peer-reviewed Short summary of my Master's thesis in psychology, on cognitive rehabilitation of autistic children through video games. Click [here](#) for an English summary.

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Education

2014–2018 **Ph.D. Mathematics (Expected)**, *University of Houston*, Houston, TX, USA.

Advisors: Krešimir Josić & Zachary P. Kilpatrick.

Dissertation: perceptual decision making (mathematical neuroscience)

Key courses:

- **Introduction to Deep Learning** (Rice U), by Ankit Patel
Hands-on course with TensorFlow where we trained architectures like LeNet5 and LSTMs, on datasets such as MNIST and CIFAR10.
- **Automatic Learning & Data Mining**, by Robert Azencott
Training of Multi-Layer Perceptron, Auto-encoders and Restricted Boltzmann Machines on MNIST dataset. Introduction to Deep Convolutional Networks.
- **Theor. Neurosc. II: Networks & Learning** (Rice U), by Xaq Pitkow and Harel Shouval
Mathematical models of retinal networks and synaptic plasticity.

2011–2014 **B.Sc. Mathematics**, *University of Warwick*, Coventry, UK.

2004–2009 **M.A. Clinical Psychology**, *Ecole de psychologues praticiens*, Paris, France.

Advisor: Véronique Donard.

Awards

2014–2016 **Presidential Cullen and Stella Ehrhardt Fellowship**, \$4,000, University of Houston.

2012 **Undergraduate Research Scholarship Scheme**, £1,600, University of Warwick.

Professional Experience

2013–2016 **Teaching Assistant**, *Several undergraduate level courses*, Univ. Warwick/UH, UK/USA.
Calculus, Statistics, Mathematical Biology, French.

2010 **Clinical psychologist**, *Adult psychiatry service*, General Public Hospital of Dreux, France.
(Full year) Counseling, support groups, personality and cognitive skills assessment for patients suffering from grave mental illness. Close collaboration with psychiatrists, nurses and other psychologists.

Computing Skills

Basic C++, R, Visual Basic, HTML5/CSS

Intermediate MySQL, Python (Numpy, TensorFlow), MATLAB

Advanced Bash, git, L^AT_EX

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Spoken Languages

Fluent **French, Spanish, English**

French & Spanish as mother tongues

FOSS project

IndieK is a Free Open Source Software project that I publicly launched a month ago. I see it as a cognition enhancer. You may read more on my personal blog.

Research Involvement

Internships

- 2015 **Visiting student**, *Instituto de Fisiología Celular*, Universidad Autónoma de México, (Fall) Mexico City, Mexico.
Ranulfo Romo's lab
Electro-physiology on macaque in tactile frequency discrimination task.
- 2012 **Research Intern**, *Institute of Digital Healthcare*, Coventry, UK.
(summer) Project on signal processing of sound-evoked EEG signals.
- 2006–2009 **Psychology Intern**, *Several public hospitals*, Paris/Rivière du Loup, France/Canada.
More than 1600 hours of internship with main emphasis on psychopathology and cognitive rehabilitation.

Workshops

- 2017 Theoretical Neuroscience Workshop, (PIs: Kilpatrick, Zylberberg), University of Colorado Boulder, CO.
Talk: *Evidence accumulation in changing environments*.
- 2017 Workshop on Theoretical Neuroscience, (PIs: Doiron, Shea-Brown, Josić, Kilpatrick, Rosenbaum), University of Pittsburgh, PA.
Talk: *Evidence accumulation in changing environments*.
- 2017 Memory School (MATHMEM), Centre de Recerca Matemàtica, Barcelona, Spain.
Topic: biology and mathematics of memory
Poster: *Change rate inference in dynamic environments*.
- 2016 Gene Golub SIAM Summer School, Drexel University, Philadelphia, PA.
Topic: SDEs and wave propagation
Poster: *Evidence accumulation and change rate inference in dynamic environments*.
- 2016 CoSyNe - main conference & workshop, Salt Lake City, USA.
Poster: *Evidence accumulation and change rate inference in dynamic environments*.

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Conferences

- 2017 Computational and Systems Neuroscience, (CoSyNe), Salt Lake City, UT.
Poster: *Change rate inference in dynamic environments*.
- 2017 Gulf Coast Consortium for Theoretical & Computational Neuroscience, (GCC-TCN), Houston, TX.
Poster: *Change rate inference in dynamic environments*.
- 2016 GCC-TCN, Houston, TX.
Poster (**Award for best poster presentation**): *Evidence accumulation and change rate inference in dynamic environments*.
- 2015 UT Austin Conference on Learning and Memory, Austin, TX.

Web links

- Academic webpage: www.math.uh.edu/~adrian
- Personal blog: <https://adrianblogtech.wordpress.com>
- GitHub repositories: <https://github.com/aernesto>
- Twitter account: @AdrianERadillo
- LinkedIn profile: www.linkedin.com/in/adrian-ernesto-radillo

This CV was built on top of a template created by Xavier Danaux (xdanaux@gmail.com)

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