

Simon Carrignon

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Education

Universitat Pompeu Fabra

PhD Student in Biomedicine

Co-evolution of trade and culture : theoretical study of the evolution of a decentralized economy driven by cultural dynamics. Focus on the Roman Empire case study. Co-direction between Barcelona Supercomputing Center and Univ. Pompeu Fabra Complex System Lab.

Barcelona, Spain

since Jan. 2015

Université Denis Diderot Paris 7

Master Student in Logic, Philosophy, History and Sociology of Science

Classes in Hist., Philo. & Socio. of Sciences. Topic of interest: Evolutionary Theory and the epistemic link btw. Evolutionary Robotics & Evolutionary Biology.

Paris, France

2011–2013

École Pratique des Hautes Études

Master Student in Natural & Artificial Cognition

Classes in Cognitive Sciences with courses of Neurosciences, Cognitive Psychology & Artificial Intelligence.

Paris, France

2009–2011

Université de Montréal

Exchange Student

One year to finish the bachelor with courses in Neurosciences, Artificial Intelligence & Bioinformatics.

Montréal, Canada

2008–2009

Université Claude Bernard Lyon 1

License Student in Computer Science, sp. MIV

License with classes in Biology, Computer Science & Bioinformatics.

Lyon, France

2007–2009

Université Joseph Fourier

License Student in Computer Science & Biology.

Two years to learn the fundamentals in Computer Science & Biology.

Grenoble, France

2005–2007

Master Thesis

Supervisor: N. Bredèche

Master “Natural & Artificial Cognition”, École Pratiques des Hautes Études (Paris,Fr)

LRI-INRIA-Paris Sud

Mars – Aug. 2011

Title: Self-organization in swarm of autonomous agents: evolution of specialized behaviors.

Abstract: The goal was to investigate the emergence of speciation during environment-driven evolutionary adaptation in a population of autonomous robotic units. We address the case of sympatric speciation (occurrence of speciation without geographical isolation). We show that such speciation is possible in a robotic setup under very specific constraints with respect to mating opportunities and resources distribution.

Supervisor: F. Bouchard

Master “Logic Philosophy History & Sociology of Sciences”, Univ. Paris 7 (Fr)

CIRST-UdeM (Canada)

Apr. – Sept. 2013

Title: Evolutionary Robotics as a model to study Biology of Evolution.

Abstract: To justify the use of Evolutionary Robotics as a model to study evolution, we first explain the general principles and history of darwinian evolution and present current approaches. After, we underline the pertinence of the application of models (as in the semantic view), and simulations of those models, to study life. To finally introduce ER and to show that, as an embodied artificial life experiment, it combines numerous advantages that make it an ideal model to study evolution.

Experience

Professional.....

LUTIN-Université Paris 8

Paris, France

Research engineer

Jan. 2010–Mar. 2012

1 week to 3 months short contracts during which I help researchers in data processing & statistical analysis and that allow me to develop or complete:

- o ACACIA Coop: a Netlogo program used to explore the worth of altruistic behaviors in swarm of autonomous agent (@git)
- o Pedestrian: a Netlogo program which allow user to test agent based pedestrian models in real map (@git).

Université Paris Dauphine

Paris, France

Junior Lecturer (Chargé de cours)

Sept. 2011–Jan. 2012

Course for 2nd yr. university students. Total amount of teaching: 36hr.

Elementary notions of algorithmic and databases manipulation (w/ Foxpro).

Université Paris 8

Paris, France

Junior Lecturer (Chargé de cours)

Sept. 2010–Jan. 2012

Course for undergraduate students (License Students). Total amount of teaching: 144hr.

C2I classes– gives the fundamentals to use the office tools and to understand computers.

Internship.....

Supervisor: E. Zibetti (CHArt-Univ. P8)

Paris, France

Human Heuristic & Autonomous Robot

Sept. 2009–Jan. 2011

Development of a Java API to control a Khepera III robot via bluetooth linked with autonomous controller build from Human Heuristics found after the analysis of real experiments.

Supervisor: A. Green (Dept. de Physio.-UdeM)

Montréal, Canada

Controler for physiological experiments

May 2009–Aug. 2009

Graphical interface and communication's tools to control and synchronize an experimental setup designed to make physiological experiments on the monkey.

Supervisor: V. Daubin (LBBE-UCBL)

Lyon, France

Phylogenetic, Bacteries & LGT

May 2008–Aug. 2008

C++ implementation of an algorithm used to adjust the species tree with the genetic tree including duplication and LGT.

Summer School & Workshop.....

1st DACAS International Workshop

Manchester, England

Data And Cities As Complex Adaptive Systems

Feb 2016

Development of an innovative and cross-disciplinary set of tools to study cities as Complex Adaptive Systems by taking into account wide range of data sources and by integrating the interactions between 'hard' infrastructure with economic, ecological and social systems. Laureate of one of the bursary offered by the Manchester Metropolitan University.

Scientific World Conception Summer School

Vienna, Austria

The Computational turn: Simulation in Science.

July 2015

Reflexions and lectures about the epistemological consequences of the introduction of computational methods and simulation in science and their relation with traditional experiment ; how it has greatly expanding the scope of what can be studied in micro-economic systems, high energy physics as well as the challenge such methods face in natural and social sciences.

Publications

N. Bredeche, J.-M. Montanier, and S. Carrignon. Evolutionary adaptation of a population of robots: benefits and issues of the evo-devo approach. An answer to Y. Jin and Y. Meng: *Evolutionary Developmental Robotics – The Next Step to Go.*, *Newsletter of the Autonomous Mental Development Technical Committee*, 8(2):8–9, 2011.

S. Carrignon. Why apply evolutionary theory to melodies. In *poster at: 3-Day International Conference on Evolutionary Patterns*, Calouste Gulbenkian Foundation, Lisbon, Portugal, 2013.

S. Carrignon, J.-M. Montanier, J. Michaud, and X. Rubio-Campillo. Co-evolution of culture and trade : impact of

cultural network topology on economic dynamics. In *44th Computer Applications and Quantitative Methods in Archaeology Conference (CAA 2016)*, Avril 2016.

S. Carrignon, J.-M. Montanier, and X. Rubio-Campillo. Modeling the Co-evolution of Trade and Culture in Past Societies. In L. Yilmaz, M. Chan, I. Moon, T. M. K. Roeder, C. Macal, and M. Rossetti, editors, *2015 Winter Simulation Conference*, pages 3949–3960, Huntington Beach, United States, Dec. 2015.

I. Gaudiello, E. Zibetti, and S. Carrignon. Representations to go: learning robotics, learning by robotics. In *Workshop Proceedings of Intl. Conf. on Simulation, Modeling and Programming for Autonomous Robots (SIMPAR 2010)*, pages 484–493, 2010.

D. Medernach, J. Fitzgerald, S. Carrignon, and C. Ryan. Evolutionary Progress in Heterogenous Cellular Automata (HetCA). In *Proceedings of the European Conference on Artificial Life 2015*, pages 512–519. MIT Press, 2015.

E. Zibetti, S. Carrignon, and N. Bredeche. ACACIA-ES: an agent-based modeling and simulation tool for investigating social behaviors in resource-limited two-dimensional environments. *Mind & Society*, pages 1–22, 2015.

Languages

French: Mother Tongue

English: Good

Good experience in academic written & spoken English

Spanish: Intermediate

Daily practice

Computer skills

OS: Linux (Ubuntu/Debian end & admin user), Windows XP, Seven, Vista.

Publishing: \LaTeX / Lua \TeX , Open Office & Microsoft Office Writers.

Programming: C/C++, R, Java, Bash, Python/Perl, Php.

Statistical analysis/Visualizing: R (very good skills), Excel, Matlab.

Interests

Among other things, I used to have a lot of associative activities. Mostly activities which go around music but also a bunch of works about sciences communication. I like reading, travel around the world and from time to time, dive into the Linux CLI.