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## **EDUCATION**

**1995-2001** Ph.D. in Computer Science, Brandeis University, Waltham Mass. Areas of specialization: learning, evolutionary methods, artificial life.

**1986-1994** Licenciatura<sup>1</sup> in Mathematical Sciences. University of Buenos Aires, Argentina. Orientation: Pure Mathematics.

## **TEACHING EXPERIENCE**

**1995-1998** Teaching Assistant. Brandeis University Dept. of Computer Science.

**1991-1993** Teaching Assistant. University of Buenos Aires, Department of Mathematics.

**1992** Teacher, Introduction to Novell Local-area network, FAO - Mexico.

## **WORK EXPERIENCE**

**1999-2001** Systems consultant. Brandeis University Dept. of Biology.

**1995** Economics modeling consultant, Buenos Aires-Colonia Bridge Bi-National Commission, Argentina.

**1994-1995** Economics modeling consultant, National Direction of Public Investment and Project Financing, Ministry of Economy, Argentina.

**1994-1995** Information distribution researcher, Center for Advanced Studies (CEA), University of Buenos Aires.

**1991-1993** Software development manager and co-CEO, Mapa Systems.

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<sup>1</sup>*Licenciatura*: 6-yr undergraduate program typical of latin american school systems. Similar to a BS and and MS put together.

**1986-1993** Systems and development head, National Association of State Providers (UAPE), Argentina.

**1983-1995** Computer systems consultant, Food and Agriculture Organization of the United Nations (FAO), México.

## REFEREED PUBLICATIONS

**2001** Funes, P. *Evolution of Complexity in Real-World Domains*. Ph.D. Thesis, Brandeis University, Waltham, Mass.

- Krishnan, B., Levine, J. D., Sisson, K., Dowse, H. B., Funes, P., Hall, J. C., Hardin, P. E. & Dryer, S. E. A new role for cryptochrome in a *Drosophila* circadian oscillator. *Nature* (to appear).

**2000** Funes, P. & Pollack, J. B. Measuring Progress in Coevolutionary Competition. Meyer, J. *et al.* (eds.) *From Animals to Animats 6*. MIT Press, 450-459.

- Pollack, J. B., Lipson, H., Ficici, S., Funes, P., Hornby, G. & Watson, R. Evolutionary Techniques in Physical Robotics. Miller, J. (ed) *Evolvable Systems: from biology to hardware*. Springer-Verlag (LNCS 1801), 175-186.
- Funes, P., Lapat, L. & Pollack, J. B. EvoCAD: Evolution-Assisted Design. Gero, J. S. (ed.) *Artificial Intelligence in Design* (supplement). Key Centre of Design, Computing and Cognition, Sydney, 21-24.

**1999** Funes, P. & Pollack, J. Computer Evolution of Buildable Objects. Bentley, P. (ed), *Evolutionary Design by Computers*. Academic Press-Morgan Kaufman, 358-367.

- Pollack, J. B., Lipson, H., Funes, P., Ficici, S.G. & Hornby, G. Coevolutionary Robotics. Koza J. *et al.* (eds.), *The First NASA/DoD Workshop on Evolvable Hardware*. IEEE Press.
- Sklar, E., Blair, A. D., Funes, P. & Pollack, J. B. Training intelligent agents using human Internet data. Liu, J. & Zhong, N. (eds.) *Intelligent Agent Technology*. World Scientific.

- 1998** Blair, A.D., Sklar, E. & Funes, P. Co-evolution, Determinism and Robustness. McKay, B. *et al.* (eds.) *Simulated Evolution and Learning*. Springer-Verlag (LNCS 1585), 389-396.
- Funes, P. & Pollack, J. Evolutionary Body Building: Adaptive physical designs for robots. *Artificial Life* 4:4, 337-357.
  - Funes, P., Sklar, E., Juillé, H. & Pollack, J. Animal-Animat Coevolution: Using the Animal Population as Fitness Function. Pfeifer, R.I. *et al.* (eds.) *From Animals to Animats 5*. MIT Press, 525-533.
- 1997** Funes, P. & Pollack, J. Computer Evolution of Buildable Objects. Husbands, P & Harvey, I. (eds.), *Fourth European Conference on Artificial Life*. MIT Press, 358-367.
- 1995** Funes, P. & Nicolini, J. L. The Value of Travel Time between Montevideo and Buenos Aires. *Annals of the Argentinian Association of Political Economics* (1995: Rio Cuarto).
- 1994** Funes, P. *Taylor Spectrum: A Joint spectrum for commutative tuples of operators in Banach space*. Thesis, University of Buenos Aires, Dept. of Mathematics, Argentina.

## PATENTS

- U.S. Patent Application: Title: "Computer Apparatus and Method for Analyzing Structural Stability" (filing date: 3/17/99) pending.
- U.S. Patent Application: Title: "Method, Apparatus and Computer Program Product for Computer Based Multi-Participant Activity" (filing date: 12/15/99) pending.

## COMPUTER SYSTEMS DEVELOPED

- 2001** Drosophila behavior analysis toolkit. Brandeis University Dept. of Biology.
- 2000** *Bid Robot*, a web information-retrieval agent. National Union of State Providers (UAPE), Argentina.
- 2000** *EvoCAD*, a CAD system for Lego bricks with an evolutionary brain.

- 1997-1999** *Tron*, an evolutionary, on-line AI game player.
- 1996-1999** *Evolvable Lego*. A system for evolutionary design of structures.
- 1996-1998** *Simulator for Lego Structures*. A simulator of gravitational stresses for Lego structures (2D & 3D versions).
- 1998** *Adaptive Behavior Information Central*. The International Society for Adaptive Behavior.
- 1995** *Economic Analysis Model for the Buenos Aires-Colonia Bridge*. Buenos Aires-Colonia Bridge Bi-National Commission.
- 1995** *National Fine Chemistry Information System*. University of Buenos Aires, Center for Advanced Studies.
- 1994** *Profitability Model for the Buenos Aires-Colonia Bridge*. Ministry of Economy, Argentina.
- 1993** *Bid Information System*. UAPE - Argentina.
- 1991-1993** *Mapa-Libraries*, a set of customizable programs for management of small businesses. Mapa Systems.
- 1992-1993** *Corporate Management System*, Espasa-Calpe Argentina.
- 1983-1995** Inventory, Library, Catalog, Evaluation, Bulletin Board, Video Graphics systems; Internet Web-Pages. Food and Agriculture Organization of the United Nations (FAO), México.
- 1984** *Rel*, a general-purpose database system. Food and Agriculture Organization of the United Nations (FAO), México.

## **SCHOLARSHIPS AND GRANTS**

- 1994-1995** Graduate Research Scholarship, University of Buenos Aires.

## **LANGUAGES**

- Fluent in English and Spanish. Limited knowledge of Portuguese and French.