Mario F. Simoni

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Educational Background

5/02	**Georgia Institute of Technology**	Ph.D. Electrical and Computer Engineering
	Thesis Title:	"Synthesis and Analysis of a Physical Model of Biological Rhythmic Movement Control with Sensorimotor Feedback"
	Thesis Advisor:	Dr. Stephen P. DeWeerth
6/96	**Georgia Institute of Technology**	M.S.E.E.
5/94	**Park's College of St. Louis University**	B.S.E.E.

Research and Teaching Experience

9/94 – pres **Research Assistant – Georgia Institute of Technology**

- Designed and tested analog VLSI circuits that model neural pattern generators
- Developed electromechanical systems to model biological movement control

6/96 – 9/96 **Graduate Internship – Intel Corporation - Santa Clara, California**

- Digital circuit design on Merced (now Itanium) microprocessor (IA-64 architecture)
- Used CMOS and Domino logic to develop arithmetic circuits for MMX technology
- Worked in team environment to meet system timing specifications

Presentations/Publications

[1] M. Simoni. *Synthesis and Analysis of a Physical Model of Biological Rhythmic Movement Control with Sensorimotor Feedback.* Ph.D. Thesis, Georgia Institute of Technology.May 2002.

[2] M. Simoni, M. Sorensen, G. Cymbalyuk, R. Calabrese, and S. DeWeerth. Control of Bursting Properties in a Silicon Neuron CPG**.** *Neurocomputing (In Press).*

[3] M. Simoni, G. Cymbaluyk, M. Sorensen, R. Calabrese, and S. DeWeerth. Development of Hybrid Systems: Interfacing a Silicon Neuron to a Leech Heart Interneuron. *Advances in Neural Information Processing Systems (NIPS) 2000.*

[4] M. Simoni and S. DeWeerth. Adaptation in an aVLSI Model of a Neuron. *IEEE Transactions on Circuits and Systems II:Analog and Digital Signal Processing*. 46(7):967–970, 1999.

[5] M. Simoni, G. Patel, and S. DeWeerth. A VLSI Architecture for Studying Coordination of Pattern Generators. *20th Conference on Advanced Research in VLSI*. (Scott Wills, Stephen DeWeerth, Ed.) IEEE Computer Society: Ann Arbor, Michigan. abstract and poster.

[6] S. DeWeerth, G. Patel, M. Simoni, D. Schimmel, R. Calabrese. A VLSI Architecture for Modeling Intersegmental Coordination. *17th Conference on Advanced Research in VLSI*. (Richard Brown, Alex Ishii, Ed.) IEEE Computer Society: Ann Arbor, Michigan. 182–200, 1997

[7] M. Simoni, G. Patel, S. DeWeerth. Analog VLSI Model of the Leech Heartbeat Elemental Oscillator. *Sixth Annual Computational Neuroscience Meeting, NIH, NSF, Big Sky Montana*. July, 1997.

[8] S. DeWeerth, G. Patel, M. Simoni. Variable Linear-Range Subthreshold OTA. *Electronics Letters. IEE:* Stevenage, England. 33(15):1309–1311, 1997.