Luis Enrique Amaya

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Professional and Technical Skills

Design and modeling of power electronic circuits.

Design and modeling of VLSI circuits.

Familiar with digital, analog, and mixed-mode simulation issues, structured programming, and UNIX system operation.

Excellent communication, teamwork and leadership skills.

Knowledge of C, Pascal, Fortran, Algol, Perl; 8086, M6800 and MC68HC11 assembly languages.

Knowledge of UNIX, Linux and Macintosh operating systems. SPICE, PSPICE, LaTeX, and basics of Mathematica. Basics of UNIX shell programming.

Fluent in english and spanish; proficient in german.

Troubleshooting and repair of electronic devices.

Education

Ph.D., Electrical Engineering, University of Illinois at Urbana-Champaign, May 1998.

M.S., Electrical Engineering, University of Illinois at Urbana-Champaign, October 1994.

B.S., Electrical Engineering, Universidad de Los Andes, Bogotá, Colombia, May 1986.

Research Experience

Research Assistant, Coordinated Science Laboratory and Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Oct. 1994–May 1998. Automatic synthesis of power electronics converters.

- ▹ Proposed a design methodology for arbitrary switching power converters.
- ▹ Produced detailed specification of methodology for DC to DC converters and implemented it in a group of C-coded computer programs.
- ▹ Designed an IC DC to DC power converter to test the proposed methodology.
- ▹ Financed 100% of college expenses.

Research Assistant, Coordinated Science Laboratory, University of Illinois at Urbana-Champaign, May 1992–Oct. 1994.

- ▹ Pattern recognition for mixed-mode simulation. Improved algorithms for arbitrary path recognition and integrated them into the iSPLIT mixed-mode simulation preprocessor program, coded in C.

Academic Experience

Instructor, Department of Electrical Engineering, Universidad de Los Andes, Bogotá, Colombia, Aug. 1989–Aug. 1991.

- ▹ Lectured on logic design, system analysis, and basic analog and digital electronics.

Instructor and Service Engineer, Department of Physics, Universidad de Los Andes, Bogotá, Colombia, Aug. 1989–Aug. 1991.

- ▹ Designed courses and lectured on analog electronics, digital electronics, and elementary applications of microprocessors in laboratory instrumentation.
- ▹ In charge of supervision and basic maintenance of physics laboratory equipment.

Instructor, Department of Computer Science, Universidad de Los Andes, Bogotá, Colombia, Jan. 1987–Aug. 1991.

- ▹ Lectured on introduction to computer programming, advanced computer programming, data structures and algorithms, and microprocessors (8086).

Instructor, Department of Electronic Engineering, Universidad Javeriana, Bogotá, Colombia, Jan. 1988–Dec. 1989.

- ▹ Lectured on introductory computer programming.

Teaching Assistant, Department of Electrical Engineering, Universidad de Los Andes, Bogotá, Colombia, Aug. 1986–Dec. 1986.

- ▹ Teaching assistant for electric circuits laboratory.

Teaching Assistant, Department of Computer Science, Universidad de Los Andes, Bogotá, Colombia, Jan. 1983–May 1986.

- ▹ Teaching assistant for introductory computer programming.

Design Experience

Electronics Designer, Department of Psychology, University of Illinois at Urbana-Champaign, Feb. 1992–Aug. 1994.

- ▹ Designed, built, programmed (MC68HC11) and tested a data acquisition board to be used in monitoring post-trauma behavior of laboratory rats.

Lighting Support Engineer, Intertrazzo Ltd., Bogotá, Colombia, Apr. 1988–Dec. 1988.

- ▹ Supervised the design and installation of halogen lighting systems.

Computer Experience

UNIX system operator, Coordinated Science Laboratory, University of Illinois at Urbana-Champaign, Sept. 1996–Dec. 1997.

- ▹ One of three system operators for the Analog and Digital Circuits Group. System consists of 50+ UNIX SUN Sparc workstations running SunOS and Solaris.

Microcomputer Support Engineer, ICM de Colombia, Bogotá, Colombia, Nov. 1987–Mar. 1988.

- ▹ Customer support and repair service for PC compatible microcomputers, modems, and dot-matrix printers.

Assembly Language Programmer, Department of Electrical Engineering, Universidad de Los Andes, Bogotá, Colombia, May 1986–Dec. 1986.

- ▹ Designed coded and tested assembly language programs (M6800) for control of electronic games used as instructional devices in the "Children's Museum".

Publications

Computer Synthesis of Switching Power Converters, Ph.D. Thesis, University of Illinois at Urbana-Champaign, May 1998.

A Design Methodology for Power Electronics - Presented at the 5th IEEE Workshop on Computers in Power Electronics, August 1996.

Automatic Partitioning for Mixed-Mode Simulation, Master's Thesis, University of Illinois at Urbana-Champaign, October 1994.

Professional Affiliations

The Institute of Electrical and Electronics Engineers.

The Association of Computing Machinery.

The Phi Kappa Phi Honor Society.