

CURRICULUM VITÆ

NICOLAU LEAL WERNECK

Personal Data

Nicolau Leal Werneck
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Single, male, born in 17/2/1981 in Belo Horizonte – MG – Brazil

Education

2005– Masters in Electrical Engineering
 Universidade Estadual de Campinas – UNICAMP

1999–2004 Graduation in Electrical Engineering
 Universidade Federal de Minas Gerais – UFMG

1998–1998 High School (3rd year)
 Colégio Pitágoras de Ensino Integral e Médio

Areas of Interest

Academic Engineering applied to human behaviour / Artificial Intelligence
 / Pattern Recognition / Information and Computing Theory /
 Cybernetics / Complex Systems.

Professional Multimedia / Signal Processing and Codification / Real-time Pro-
 gramming / Embedded Systems / Network Administration.

Objectives

Academic Study the characteristics and limits of the human mechanisms of
 perception and reasoning, and try to model and simulate them.
 Analysis and synthesis of natural signals such as speech, music
 and body movements. Question all paradigms.

Professional Program in low-level environments. Implement heavy number-
 processing algorithms. Create of scripts for system administra-
 tion. Finding *ad hoc* solutions for data extraction.

Outline

Electrical engineer specialized in computation. Great aptitude for programming. Easiness to study new languages, programs and tools. Motivation to approach new problems, and also for conducting simple yet important tasks such as soldering circuit boards and installing operational systems.

User of GNU/Linux systems with basic experience in system and network administration. Strong advocate of free standards and free software.

Coursing graduate school since March of 2005, with an institutional scholarship since August of this year. Expecting to obtain the Masters title by the end of 2006.

Computer Knowledge

Platforms	UNIX (specially Debian GNU/Linux), MS Windows (very little contact lately). Computer hacker since childhood.
Languages	<i>Native:</i> C, C++, Matlab (octave), PHP / <i>Experienced:</i> Python, Perl, AWK, bash, Tcl, LISP, assembly in general, Pascal/ <i>Beginner:</i> PROLOG, Fortran, ML, BASIC
“Languages”	TeX, HTML, SQL, flex, spice, pic, regex, csound
Libraries	OpenGL, GTKmm, VTK, WxWidgets, alsa
Programs	GIMP, gEDA, Spice, Eagle, Emacs, vim, mplayer, X, VNC, apache, mapserver

Human Language Knowledge

Native	Portuguese
Experienced	English
Beginner	Japanese, French, Quenya

Other Knowledge

Electronics. Confection of home-made circuit boards. Statistics. Information Theory. Number Theory. Network Theory. Cinema. History of art and science. Philosophy. Psychophysics.

Present Research Activities

Study of the musical effects of overdrive and reverberation. How they work, and how they are perceived by human listeners. Development of tests to understand the physical processes behind these distortions, and of psycho-physical tests for measuring the perception of the effects.

Professional and Academic Activities

UNICAMP	Implementation of a prototype for the intra-band interactivity channel for the Brazilian digital TV standard.
May-Aug 2005	<i>Position: Programmer and researcher (scholarship)</i> — Study for the implementation of a Linux network driver, basic usage of a FPGA PCI board, and of the IEEE802.16 protocol.
Excegen S.A.	A R&D company with the goal of aprimorate the Brazilian herd of cattle trough biochemistry.
2004-2004	<i>Position: Programmer and researcher (intern)</i> — Development of a naïve Bayes classifier for prediction of the weight gain of bovines from genetic data. — Development of a C++ program for application of the classifier model. — Analysis of data collected from field.

- CEFALA** Multidisciplinary research group at UFMG that studies speech, music, multimedia and human perception in general.
- 2002-2004 *Position: Researcher (scientific initiation scholarship)*
 — Study on the functioning of musical distortions.
 — Creation of a psycho-acoustic experiment involving overdrive utilizing a program made in C++ for signal processing, management of the experiment, and PCA analysis of the answers. The analysis permits looking for the thresholds of distortion perception.
- 2002- *Position: Administrator and programmer (collaboration)*
 — Implementation with C++ and OpenGL of a model for realistic animation of a 3D face from the real-time analysis of speech signals.
 — Contribution to a prototype of a fingerprint identification and presence control system. It was based in a RISC processor with embedded Linux.
 — Application of simple multidimensional scaling on the results of a poll about similarities between paintings.
 — Collaboration to the administration of the local network.
 — Study for the configuration of a network with diskless clients.

Licht Consultores Associados IT consulting firm, focused on geoprocessing.

- 2000-2002 *Position: Programmer (not hired)*
 — Treatment of data for reports with geographic information.
 — Creation of dynamic HTTP sites with geographic information.
 — Administration of web servers and databases.

Bibliographic Production

Análise da Sensibilidade de Ouvintes a Variações em Parâmetros de Distorções Musicais, Nicolau Werneck, Hani Yehia – poster presented at the XIII Semana de Iniciação Científica da UFMG. 2004.

Sistema de Reprodução Multimodal da Fala, Nicolau Werneck, Leonardo Carneiro, Lucas Malta, Hani Yehia – Scientific Initiation Workshop from SIBGRAPI 2003.