RESUME

Hermes Aguiar Magalhães, PhD

"I continuously seek the opportunity to overcome challenging situations by providing creative technical and administrative solutions to incoming problems in high technology area"

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PERSONAL INFORMATION

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SUMMARY

More than 20 years of experience in real world – research and product level – electronic engineering and computer science projects. Proved working background in object oriented programming, generic programming, digital signal processing, networking and distributed systems, computer architecture, speech processing, array processing, digital spectral analysis, stochastic processes, adaptive filtering and system identification. Skills are at engineering, teaching and management levels. Software, circuits & system design, integration and test working experience goes from underwater communications and robotics for oil industry, to marine weapons, manned submersible life support, telephonic switching plant design and construction, radar-sonar-vibration-oceanographic and electric-measurements signal processing. M.Sc. degree was related to "Higher Order Statistics" applied to non-gaussian radar sea clutter signals and non-linear systems. In 2002 managed the implementation of GSM Network over Brazilian states of Minas Gerais and Espírito Santo, contributing to the world's fastest mobile network rollout schedule completion in history. Founder of DSP ART Hardware & Software Ltd., a consulting company focused on DSP systems design. Ph.D degree attained in 2008, on generic programming applied to signature analysis for traffic law enforcement applications. Member of CEFALA – Center for Research on Speech, Acoustic, Language and Music. Current interests are focused on good practices of software engineering for complex embedded real time systems development, generic programming. Currently involved in the construction of object oriented "delegate services" techniques and infrastructure to incorporate the paradigm of Service Oriented Architecture (SOA) into complex distributed embedded real time and mobile systems environment.

GRADUATION

For GPA Grades and Transcripts, click HERE

Doctorate course: PhD. Degree in Electrical Engineering (2008)

EEUFMG - Federal University of Minas Gerais - School of Engineering
Location: Belo Horizonte, MG, Brazil
GPA: 4,000 (in a scale up to 4)

Focus on software engineering and generic programming, applied to test and validate new concepts on Inductive Loop Vehicle Detector – ILD – High Resolution Signature Analysis Techniques for Vehicle Classification and Law Enforcement Systems. The software incorporates an innovative concept of service-oriented architecture – SOA: a generic delegation framework is built, targeting the development of multitasking real-time distributed system applications. This framework is then for the first time instantiated and validated, with target application being the software of a prototype for inductive loop signals collection at the field. This architecture lets the programmer adjust the efficiency-traceability tradeoff in a multithreading environment, what is made possible through choice of in-depth level of operation for publishing services and for requesting services. The delegate and proxy mechanisms embedded in this architecture also allow a potentially higher efficiency in service dispatch with complex data to exchange, through on-demand specialization of dispatching class.

Other relevant activities during Ph.D. course:

Development of a High resolution formant extraction algorithm based on Multiple Signal Classification (MUSIC) noise subspace eigenanalysis. An overview on human vocal tract and the methods used for speech recognition and synthesis by linear predictive coding (LPC). An introduction to coding methods, including code-excited linear prediction (CELP).

Development of a software for Speed Measurement from Video for moving objects in scene, exploiting consecutive odd-even video frames and object contour detection using *Level Set* method.

Clear understanding of real time concepts under UML 2.0 notation, and its extensive use for componentization of the Traffic Law Enforcement System Project software parts and integration with third-party API vendors. Construction of a delegate service software mechanism using templates and *functors* over Borland C++ Builder 6.0, in order to publish services in a “black-box” fashion and securely decouple the service users from the service providers in a distributed system environment. The implemented delegate mechanism also tracks the sequence of requested services in order to provide a means of assisted debugging in a multithreaded environment. This delegate mechanism is used to build service oriented architecture – SOA – applications.

Graduate course in Business Management (Executive MBA) (1997-1998)

FGV - Getúlio Vargas Foundation
Location: Belo Horizonte, MG, Brazil
Duration: 402 hours
GPA: 3,606 (in a scale up to 4)

Main activities during Business Management graduate course:

The subject content of this course includes macro economy, marketing and strategic planning, organization's budget planning (including EVA - "Economic Value Added" concepts), tributary planning, production planning and control (including "break even" calculations and stock planning), total quality management, financial accounting, cost management and price estimation (including ABC - "Activity Based Cost" concepts), management information systems, corporate finances, applied financial mathematics, organization's behavior and life cycle, interpersonal communications, human resources management and work relations.

Graduate course: M. Sc. Degree in Electronics Engineering and Computer Science (1988-1991)

ITA - Aeronautics Institute of Technology
CTA - Brazilian Aerospace Technologic Research Center
Research sponsored by CAPES (Brazilian Governmental Graduate Agency)
Location: São José dos Campos, SP, Brazil
GPA: 3,538 (in a scale up to 4)

Main research activities during Master in Science graduate course:

Telecommunications

Digital communications, digital signal processing, classic and parametric digital spectral analysis, digital signal quantization and coding, adaptive filtering, radar and vibration signal processing, HOS - "Higher Order Statistics" (cumulants and polyspectra) applied to non-gaussian signals and non-linear systems (Weibull distributed radar sea clutter). HOS processing techniques are usually incorporated into communication systems to deal with non-stationarity inherent to communications channels.

Computer Architecture

Vectorial and parallel processing, multiprocessing, array signal processing, graphics computational systems (hardware and software), 16/32 bits microprocessors (Intel, Motorola), digital signal processors (DSPs: Texas Instruments, NEC, Motorola), high performance computer architecture.

Control Theory

Stochastic Processes, Kalman and Wiener filters, system identification through parametric modeling.

Undergraduate Course: B.Sc. Degree in Electrical Engineering (1983 - 1987)

EEUFMG - Federal University of Minas Gerais - School of Engineering
Location: Belo Horizonte, MG, Brazil
Specialization in Control Systems and Automation
GPA: 3,475 (in a scale up to 4)

PROFESSIONAL SKILLS

DSP ART Hardware & Software Ltd. (currently working since Sept. 2002)

- Category: Consulting Hardware & Software Development
- Main activity area: Hardware & Software Development of Digital Signal Processing Systems
- Current position: CEO - Business Development
- Location: Belo Horizonte, MG, Brazil

Founder of DSP ART Ltda, a consulting company focused on Digital Signal Processing (DSP) systems development. DSP ART aims to help other companies of virtually any area to make it possible to incorporate DSP microprocessors and mathematical related techniques into their products, bringing them to the cutting edge of technology development. DSP ART is currently involved in traffic management and law enforcement systems development, biomedical equipments, speech processing, electrical measurements applications, as well as image processing.

The most recent project comprises all aspects (electromechanical, electronics, software architecture engineering and programming) of a Traffic Law Enforcement System that captures and processes vehicle images upon measurement provided by detection over an inductive loop sensor (ILD) installed under the traffic roadway. The corresponding software architecture is model-driven conceived under UML 2.0 notation, using design patterns, proprietary delegate services infra-structure and “low-level” service oriented architecture (SOA). The programming language is C++ over Windows XP operating system. One of provided alternatives for vehicle speed measurement is in image sequences. The displacement is measured with the analysis of two consecutive fields followed by the use of the “Level Set” method and the energy functional of Mumford and Shah to detect vehicle borders (for more details, refer to “Published Matters” section of this resume).

AIM TELECOM Consortium - Construtora Andrade Gutierrez (from 09/01 to 06/02)

- Category: Telecommunications Implementation Services
- Main activity area: Implementation of GSM Cellular Network (Construction Works and Telecomm.)
- Current position: Operations Manager
- Location: Belo Horizonte, MG, Brazil

The **AIM** Telecom Consortium was formed by "**A**ndrade Gutierrez" (main Brazilian construction works company and share owner of telecomm. companies), "**M**astec" (USA Telecomm. company) and "**I**nepar" (main Brazilian towers/poles manufacturer) to build an entire GSM Cellular Network using Nokia technology over Rio de Janeiro, Minas Gerais and Espírito Santo states, comprising 2600 sites total (civil works and telecomm. implementation). Designated Operations Manager for Minas Gerais and Espirito Santo areas. Also a member of Andrade Gutierrez Team for Strategic Planning over telecommunications area.

SET - Sistemas Especiais de Telecomunicações Ltda (from 03/94 to 08/01)

- Category: industry
- Main activity area: project and development of electronic systems in telephony
- Last attained position: Technical Director
- Location: Belo Horizonte, MG, Brazil

Started at SET as an expert engineer in digital signal processing, hired to develop a DSP subsystem that was incorporated to the "MSC" project described following. Designated in 07/1994 as the coordinator of the hardware & software development group, becoming its manager in 10/1995, further incorporating the operations area. Designated to be SET's Technical Director in 03/97, coming to be the executive responsible for the development, production and operations areas for the next four years.

SET-MSC System - Upgrading of electromechanical telephonic plant to incorporate digital services and supervision

Management of SET-MSC System *hardware and software development* teams. At that time this system implemented in the electromechanical telephonic plants all services provided by the digital ones, including supplementary services, telephonic traffic analysis and supervision, protocol monitoring, DTMF dialing, billing measurements, etc. It's man-machine interface was windows-based, and we adopted object oriented techniques to *distributed systems*, operating in *real time*, over a proprietary hardware architecture. The system bus was a modified ISA with hot-insertion plug-and-play capability. The basic control and data acquisition hardware unit used a multitask operating system, and these units were Ethernet linked. The software complexity was of about 300 thousands coded lines. Further technical details on this hardware and software architecture can be found in the *IEEE 38th Midwest Symposium on Circuits and Systems - 1995* issue. More than 120.000 subscriber lines were upgraded in Brazil between 1995 and 1999.

Development of a *digital signal processing subsystem* (hardware and software) to substitute the electronic "register", that "intelligent"; part of every electromechanical telephonic plant responsible for the connection of two subscribers. This subsystem, besides other functions, is able to translate, monitor and generate MFC-R2 and MFP communications protocol, used to guide subscriber's connection worldwide. Fixed point DSPs (Texas Instruments TMS320C25) and PCM COMBO CODECS were used to provide eight transceiver channels per board, which led to the development of a multitasking operating system environment. The software, implemented in *C (20%) and assembly (80%)*, had a complexity level of 14000 coded lines, and incorporated features as AGC and relay spike rejection techniques.

SET-SLA System - Identifies and locates abnormal conditions in metallic subscriber lines

Management of SET's development team, in conjunction with TELEMAR-MG (local telephonic operator company) and UFMG - Federal University of Minas Gerais, through its CPDEE - Electrical Engineering Research and Development Center, to create a non-linear device to automatically identify and locate anomalous characteristics in metallic subscriber lines, from the telephonic plant. This device, establishes a frontier between company's and subscriber's environment without interrupting the metallic line at any moment. This allows a permanent installation, so that the responsibility of each part can be determined at once, without the need to go to the defect point. CPqD has approved this system in what concerns to high voltage supportability, and its functional aspects have been approved by TELESP and TELEMAR technical teams, two of the three major Brazilian fixed telephony operator companies. This project resulted in a set of patents in fixed telephony field.

Administrative Tasks

Consulting contracts negotiation and management for telephony electronic systems development. Human resources recruitment. Experience in public contests through technical proposal's elaboration. Main dealer in what concerns to public telephonic operator companies, at director and engineering management levels. Coordination in writing technical procedures for ISO9001 total quality management implementation in the development and production areas. Field logistic and installation management of

SET-MSC System at TELEMAT (Mato Grosso's state telephonic company) (40000 subscriber lines).

Management of SET's computer network, which uses server-client architecture and Windows NT operating system. Microcomputer knowledge at the applications level (Windows, Word, Excel, Project, Matlab, etc.) and hardware level (configuration, maintenance, dimensioning, etc.).

Idealizer and technical dealer of the "Cooperation Agreement"; between SET and FCO - Christiano Ottoni Foundation,(which is part of UFMG's School of Engineering structure). Through this agreement, research is made with help of teachers and students at CPDEE - Electrical Engineering Development Research Center, with the main purposes of developing better solutions for SET products, research for new technologies and personal training. This agreement was established year 1994 with activities through 2001.

CONSUB Equipamentos e Serviços LTDA (period: from 06/1992 to 03/1994)

- Category: industry (formerly DSND Consub, it is now established as "SIEM CONSUB S.A.")
- Main activity area: underwater engineering, sonar and marine weapons, remote operated vehicles (ROV) for oil industry.
- Last attained position: CAD team coordinator
- Location: Rio de Janeiro, RJ, Brazil

As soon as I finished my M.Sc. degree in DSP area, I was contracted by CONSUB to work at the Brazilian Navy's "Sonar Project", in a consortium formed by CONSUB, ESCA, ELEBRA and SFB private companies. Later, I was also involved in the many other projects at CONSUB, as listed below, related to military and oil industry, and even a tourism submersible, the first crewed submersible made in Brazil. In September of 1993 I was designated to coordinate CONSUB's computer aided design team.

Submersibles and ROVs (Remote operated vehicles), offshore engineering and underwater robotics:

Submarine Module for Fatigue Fissure Inspection: by the use of an Eddy-current sensor coupled to a robot with five degrees of freedom, mounted on a ROV capable of orbital movements around tubular structures of oil platforms, we are able to verify the existence of dangerous fissures. This project was developed in cooperation with CENPES: PETROBRAS Research Center (Brazilian public oil company) and IKPH: Institut Für Kerntechnik Und Zerstörungsfreie Prüfverfahren - Universität Hannover (1992 - 2nd semester).

ROV "hot" intervention in "Wet Christmas Tree" (group of underwater valves that controls offshore oil exploitation) at oil well MRL-6 AFM 540.20.060/92 PCM 160.24.0801/92, using master-slave manipulator to position and actuate "Hot-tap" tool (1993,1st semester).

Tourist Submersible ST-100 - Argos: (Link is to 2.3MB PDF Brochure) I was responsible for the electronics and instrumentation related to navigation, underwater communication and life-support systems monitoring. I was also responsible for the battery system design and maintenance (120V, 1500Ah for traction and 24V, 750Ah for instruments). I worked as well in the conception and review of propeller command and protection electric circuits. This is the first crewed submersible made in Brazil, with a nominal depth of 100 meters, and capacity for 16 passengers and 2 crew members (1992 -1993). The Argos submarine is now under care of US Submarines, Inc.

Rescue Submarine Chamber - SRS: crewed diving chamber at atmospheric pressure for Brazilian Navy's "Felinto Perry" submarine rescue vessel, used to bring up to eight crew members to surface each time, when in hazardous condition underwater, in a depth up to 350 meters. I worked in the design and construction of the electric power supply, batteries, lighting, communications and environmental control instrumentation subsystems (1993, 2nd semester to 1994, 1st semester).

Sonar and Weapons:

Model 2007 Sonar Upgrade: determination of hydrophone sensor array capacitance variation effect on sonar beamforming and beamsteering. This sonar is used on "Humaita" class Brazilian Navy conventional submarines (1992, 2nd semester).

"Sonar Project" at IPqM - Brazilian Navy's Research Institute: "Wide Range Searching Passive Sonar Operative Specification", in conjunction with Sonar Group at IPqM, and SFB, ESCA and ELEBRA defense Brazilian companies (1992 - 1993).

Performance Test of IPqM / CONSUB Marine Explosive Contact Mine MFC-100: signal processing of acoustic explosion signals collected through hydrophone array, to find out its real performance and to determine its counter-mining distance (1993, 1st semester).

Development of an *"Acoustic-magnetic Triaxial Sensor to the Marine Explosive Mine"*: in conjunction with IPqM, I worked on the design of an acoustic-magnetic sensor capable of signature analysis of ship metallic hulls, to be a part of the explosive defense mines under development (1993, 2nd semester to 1994, 1st semester).

Oceanographic Signal Processing:

Spectral analysis of wave and tide grapher signals. pH, temperature and conductivity sensor modeling for oil field oceanographic buoys. Signal processing and analysis of oceanographic data, acquired to help in the design of "Barra da Tijuca's" marine emissary by CEDAE - the local sanitary company (1993).

Technical Documentation:

Composition of *Multi-frequency Sonar Target* "as built" manufacturing manuals. This device was developed by CONSUB to Brazilian Navy squad training. It simulates a target when reached by a sonar signal, echoing a signal of the same frequency (06 to 09/1992).

Coordination in technical documentation composition of tourist crewed submersible ST-100 Argos (1993-1994)

From 1996 to 2001, member of Telecommunications Technical Commission of "SME - Minas Gerais Engineers Society", a non-governmental non-profitable organization that serves as a forum, where discussions about all engineering areas can take place. This society also promotes events like technical seminars and workshops, etc. I've been the commission's 1st secretary from 1996 to 1998, and Marketing Coordinator of the Enfotel 1999, a forum of great importance for discussion of issues related to telecommunications and computer science.

TEACHING ACTIVITIES

- 1st semester of 2009: Information Systems undergraduate course part-time teacher at PUC-MG - Minas Gerais Pontifical Catholic University. Also teached "Physical Modeling Techniques for Game Programmers", at "Digital Game Programming" undergraduate course at the same university during 2nd semester of 2008.
- During years 2006 and 2007, teached *Human Computer Interaction, Operating Systems* and *Algorithms and Data Structures* at PUC-MG - Minas Gerais Pontifical Catholic University's Information Systems undergraduate course.
- Part-time techer at the DELT - Electronic Engineering Division of EEUFMG - UFMG's School of Engineering at the telecommunications area from 09/1994 to 08/1995. Approved in a public contest in December, 1997 to be an assistant professor (M.Sc. degree) at the same division.
- In 1991, teached probability, random variables, stochastic processes and Fourier Analysis at IEC - Continuous Education Institute, in its telecommunications course, at PUC-MG - Minas Gerais Pontifical Catholic University. It is a program for recycling graduated professionals on emerging technologies.
- In 1990 teached C, Fortran and Pascal programming languages as an associate professor to Computer Science Department at Braz Cubas University, situated in the city of Mogi das Cruzes, SP.
- As an invited lecturer, teached the following courses for various institutes at CTA (Aerospace Technologic Research Center, São José dos Campos, SP, Brazil):
    - *Digital Spectral Analysis, at ITA - Aeronautics Institute of Technology. This course was offered by the first time in 1990, 2nd semester, to the post-graduated students, institute researchers and professors. I was invited by Prof. Fernando T. Sakane, responsible for the discipline, to teach during the 2nd trimester, the advanced techniques of parametric spectral analysis. Now this is a regular post-graduate discipline.*
    - *Mathematics and Algorithms for Digital Spectral Analysis, at PROPESA (which stands for "Experts Training Program for Aerospace Sector"), in October 1990, from 15 to 19 (33 class-hours). PROPESA is an IFI ("Industrial Foment and Coordination Institute";) training program. An associated publication is mentioned further.*
    - *"Radar Signal Processing - Sea Clutter": A lecture at ITA in 29/08/1991, as a contribution to the discipline "Telecommunications Seminars".*
    - *Semiconductor Fundamentals at Flight Protection Institute - IPV. This is a broad course, in which I contributed with two disciplines: Operational Amplifier Fundamentals (26 to 30/03 and 18 to 21/09/1990, 20 class-hours each), and Semiconductor Devices (27 and 28/08/1990 - 8 class-hours).*

UNDERGRADUATE ACTIVITIES

- Two years in the LEAT - Extra-High Voltage Laboratory at UFMG, working in design and construction of electronic prototype equipment for high and extra-high voltage essays and measurements. The research was sponsored by FCO - Christiano Ottoni Foundation (UFMG's engineering school foundation) from 10/85 to 03/86, by CNPq - National Council for Scientific and Technological Development from 03/86 to 03/88 and by CPq - UFMG's Research Council - from 05/86 to 11/86.

SOFTWARE TOOLS SKILLS

- Matlab, Protel Schematics, Enterprise Architect, Euresys Machine Vision, ALTERA logic devices, DFDP3 Signal Processing Toolbox, Borland C++ Builder, DLL Programming, Assembly for DSP, MCU and general purpose CPU, Windows and Linux programming environment, MsOffice, MsProject and OpenOffice.

SHORT COURSES

- Seminaries on Economics, Mathematics and Finance at FACE / UFMG, Belo Horizonte, MG, 2004:
  - *Taxes Load and Primary Surplus – Sept.23/2004, by Dr. Ives Gandra da Silva Martins, Ph.D from Univ. Mackenzie*
  - *Venture Capital and Private Equity, - Nov.11/2004, by Dr. Marcus Regueira, MBA from Wharton*
  - *From Brazilian Macro to Microeconomy , - Nov.18/2004 by Prof. Dr. Roberto Macedo (FIPE/USP, CNI, BID), Ph.D from Harvard.*
  - *Brazilian Economy Perspectives – Nov.25/2004, by Dr. Marcos Lisboa, former Secretary of Economic Policy at the Brazilian Federal Ministry of Finance, Ph.D from Univ. Pennsylvania.*
  - *International Crisis and the Professional Education of Risk Analysts – Dec.9/2004, by Prof. Dionísio Dias Carneiro,, PUC/RJ, M.Sc. FGV and Vanderbilt University, M.A.*
- VI Computer Science School (from 07 to 15/july/88, at UNICAMP, Campinas, SP):
  - *Systematic Development of Correct Programs - the Denotative Approach*
  - *Digital Systems Validation Methods*
  - *Vector Processing and Alternatives for Concurrent Computations*
  - *Image Synthesis and Computer Animation*
- VI Brazilian Automatic Control Congress (from 25 to 28/nov/86, at Minascentro Convention Center, Belo Horizonte, MG), related to the following:
  - *Theory and Application of Pulse Width Modulation with Harmonic Optimization for Frequency Static Converters*
  - *Artificial Intelligence*
- PROPESA - Experts Training Project to the Aerospace Sector (from 31/july to 02/aug/89, at IFI, CTA, São José dos Campos, SP):
  - *Weibull Radar Clutter and its Suppression*
- 9th Brazilian Telecommunications Symposium (from 02 to 05/Sept/91, at USP Polytechnic Institute,São Paulo, SP):
  - *Introductory Course in Optic Communications*
- Texas Instruments Seminar: *Digital Signal Processors.* Oct/1988, São Paulo Convention Center
- *English Language*: fluent verbally and written, after courses taken from 1980 to 1984 at Belo Horizonte, and continuous practice since then.
- *Programming languages*: C, C++, (experience in mixed-language programming, eg. Fortran, DLL, etc.), UML, Matlab, as well as assembly languages for DSPs and general purpose CPUs.
- *EPLD Logic Devices*: ALTERA Erasable Programmable Logic Devices Programming (16 class-hours in 12/96 at UFMG's School of Engineering, Belo Horizonte, MG).

PUBLISHED MATTERS

- **"High Resolution Analysis of Inductive Loop Detector Magnetic Profiles for Automotive Vehicle Classification".** Doctorate Thesis, UFMG – Universidade Federal de Minas Gerais, 2008, Belo Horizonte, MG, Brazil (document in Portuguese with parts in English).
- **"Speed Measurement Exploiting Consecutive Video Frames and Contour Detection Using Level Set Method"** – SPGEE'05 – Seminário de Pós Graduação em Engenharia elétrica, CPDEE , 2005, UFMG. Belo Horizonte, MG, Brazil. Co-authors: Cherem, M., Yehia, H., Braga, A. (document in Portuguese).
- **"Radar Sea Clutter Parametric Spectral Modeling - Autoregressive Modeling by Entropy Maximization and ARMA Modeling by Cumulants"** - Master in Science Thesis, ITA - Aeronautics Institute of Technology, 1991. CTA, São José dos Campos, SP, Brazil (document in Portuguese).

- ***"Parametric Spectral and Polyspectral Estimation for Digital Signals and Systems"***, Lecture Notes at ITA, 1991. CTA, São José dos Campos, SP, Brazil. *This notes are in Portuguese. They were used in the course "Digital Spectral Analysis", mentioned at "Teaching Activities" section of this resume.*
- ***"Parametric Identification of Vibrational Mechanic Systems using CAMAC (Computer Automated Measurement and Control)",*** Proceedings of the SBPC 42nd Annual Meeting *(SBPC stands for Brazilian Society for Science Development)*, July, 1990. Porto Alegre, RS, Brazil. Co-authors: Francisco J. Gradinetti and Luiz C. S. Góes (document in Portuguese).
- ***"Mathematical Tools for Digital Spectral Analysis"***, Lecture Notes at PROPESA, 1990. IFI - Industrial Foment and Coordination Institute, CTA, São José dos Campos, SP, Brazil. *This publication is in Portuguese. It was used in the course "Mathematics and Algorithms for Digital Spectral Analysis".*
- ***"Radar Sea Clutter Preliminary Analysis"***, 9th Telecommunications Brazilian Symposium, September, 1991. USP, São Paulo, SP, Brazil. Co-authors: David Fernandes, Alessandro Anzaloni and Alexandre Hannemann (document in Portuguese).
- ***"A Distributed Processing System Architecture Implementation for Analog Telephonic Plant Modernization, Monitoring and Control",*** IEEE 38th Midwest Symposium on Circuits and Systems, august, 1995. Rio de Janeiro, RJ. Co-authors: Andréa F. Peixoto and Anderson R. Severino. (document in English).
- ***"An Objective Comparison Between Cumulant-Based and Burg's Parametric Modeling of Weibull Radar Clutter in the Spectral and Ensemble Domains: a Case Study".*** IEEE 38th Midwest Symposium on Circuits and Systems, august, 1995. Rio de Janeiro, RJ (document in English).

TRANSLATION

- Translation from English to Portuguese (1996): ***"Digital Principles and Applications - 5th ed.",*** Donald P. Leach, Ph.D. and Albert Paul Malvino, Ph.D., Glencoe (Macmillan/McGraw-Hill), 1995. Translated to Brazilian publisher Makron Books, Rio de Janeiro.

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