Gerardo L. Febres

12006 Golf Ridge Ct. Apt. 101
Fairfax, Virginia 22033, USA
Phone +1 703 864 5802
Web site: *www.gfebres.net*,
e-mail: gerardofebres@usb.ve / mail@gfebres.net
Birth : Caracas, 18 January 18th, 1960.

- **PhD Sciences** (2015): *Universidad Simon Bolívar. Venezuela*.

  Master of Engineering. Operations Research (1989): *Cornell University*. Ithaca, NY. USA.

- **Mechanical Engineer** (1982): *Universidad Simon Bolivar. Venezuela*.

Some relevant activities:

Currently developing methods to extract maximum information from large data structures, with applications in time-series pattern recognition and classification.

Creator and developer of the **Autonomous Data Representation (ADR)** and the MoNet platform, a system for modeling and analyzing complex systems. ADR serves as a pseudo-language for compactly describing data networks and their structural syntax, supporting advanced simulation environments and multiple research publications.

Designer and developer of the **Formula 1 Game**, an educational simulator of race car performance and strategic investment, widely used in university courses on optimization, modeling, and decision-making.

Professor, Department of Processes and Systems, Simón Bolívar University (Venezuela), teaching Linear Models, Production Management, Decision-Making, and Systems Modeling.

Developer of computational tools for representing and integrating complex systems in real-time business operations, supporting international consulting in operations research, industrial engineering, and automation of legal and electronic archival processes.

International consultant in IT and systems modernization, including property and land registration systems in Venezuela and the Dominican Republic through the Inter-American Development Bank (IDB).

Former Director of a company designing and manufacturing electronic instruments for process measurement and control, including thermal flow switches from concept to production testing.

Advisor on **process optimization** for steam and gas plants, pipelines, and oil recovery systems. Contributor to Automation Master Plans for Lagoven S.A. and Maraven S.A. (now PDVSA), including conceptual models and operational automation strategies.

SPECIALTIES and INTERESTS

- Information models
- System Dynamics and Modeling
- Mathematical and Computerized Optimization
- Complex systems modelling
- Statistical and Stochastic models
- Machine learning
- Optimization and process automation
- Quantitative linguistics
- Education Technology
- Work Flow Systems

BACKGROUND and STUDIES

Doctor of Science. Universidad Simón Bolívar, Venezuela 2011-2015
Thesis: Quantifying the Complexity of Languages. (Outstanding Mention)

Master's Degree. Operations Research, Cornell University, New York, USA. 1988-1989

Mechanical Engineer, Universidad Simón Bolívar, Venezuela. 1977-1982

- Thesis project: Design and Modelling of a Hovercraft. (Honor Mention).
- Teaching Assistantship of the Dynamics Laboratory (09/1980-07/1982).

Other Courses and Activities:

- Origins of Life (40 hrs.). *Santa Fe Institute* (SFI), U.S.A. (Jun-Sep 2019).
- Complex Physical, Biological, and Social Systems (40 hrs.). *New England Complex Systems Institute (NECSI)/Massachusetts Institute of Technology* (MIT), Cambridge, Massachusetts, U.S.A. (Jun 2013).
- Complex Systems Modeling and Networks (40 hrs.). *New England Complex Systems Institute (NECSI)/Massachusetts Institute of Technology* (MIT), Cambridge, Massachusetts, U.S.A. (Jun 2013).
- *Robobusiness Conference*. Organized by Robotic Trends (24 hr.). Boston, Massachusetts. (May 2007).
- eComerce and eKey infraestructura congress Organized by WiseKey (32 hr.). Genève, Switzerland. (Nov. 2000).
- Avenue Programming (Language for ArcInfo (*Geografical Information Systems* GIS) (24 hrs.). Caracas, Venezuela. (1996).
- Technology and Oil production equipment (80 hrs.). Rike Service, Ventura, CA, U.S.A. (1992).
- Engineering Management (166 hrs.). IESA, Caracas, Venezuela (1991).
- Multi-phase flow in pipes. (80 hrs.). Lectures by Dr. James Brill & Dr. Ovadia Shoham de *Tulsa University* at Intevep. Los Teques, Venezuela (05/1990).
- Systems dynamics (40 hrs.). Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, U.S.A. (07/1989).
- Técnicas para el análisis de problemas (40 hrs.). Ciudad Ojeda, Venezuela (05/1987).
- Basic Oil-Field Engineering (120 hrs.). Shell Oil Company, La Haya, Holanda (09-10/1986)
- Heavy oil thermal recovery. (32 hrs.). Maracaibo, Venezuela (07/1983).

PUBLICACTIONS AND RESEARCH

Published articles

Amahury J. Lopez-Díaz, Pedro Juan Rivera Torres, **Gerardo L. Febres**, Carlos Gershenson. Characterizing Open Ended Evolution Through Undecidability Mechanisms in Random Boolean Networks. arXiv:2512.15534 [q-bio.PE].

Franco, M., **Febres, G**., Fernández, N. et al. The art of misclassification: too many classes, not enough points. *EPJ Data Sci.* 14, 49 (2025). https://doi.org/10.1140/epjds/s13688-025-00565-7

Febres, G.L. Nested Pattern Detection and Unidimensional Process Characterization. *Entropy* 2024, 26, 754. https://doi.org/10.3390/e26090754

G. Febres, C. Gershenson. A Deterministic–Statistical Hybrid Forecast Model: The Future of the COVID-19 Contagious Process in Several Regions of Mexico. *Systems* **2022**, 10, 138. https://doi.org/10.3390/systems10050138

Febres G (2022) Complementing the Linear-Programming Learning Experience with the Design and Use of Computerized Games: The Formula 1 Championship Game. *International Journal of Advanced Multidisciplinary Scientific Research (IJAMSR)* ISSN:2581-4281.

D. Guerrero, P. Rivera, **G. Febres**, C. Gershenson. Towards a Measure for Characterizing the Informational Content of Audio Signals and the Relation between Complexity and Auditory Encoding. *Entropy* 2021, 23, 1613. https:// doi.org/10.3390/e23121613

Febres GL (2021) Dynamic Adjustment of SIR Model with the Social Permissiveness: An Actual Measure of the Infection Rate. *J Bacteriol Parasitol*. S11: 003.

G. Febres. Assessing the impact of social activity permissiveness on the COVID-19 infection curve of several countries. *arXiv*:2106.04085v2 [q-bio.PE].

G. Febres. Basis to Develop a Platform for Multiple-Scale Complex Systems Modeling and Visualization: Monet. *Multidis Res Rev* 2019. Volume 1:2(35-46). doi 10.3619/JMRR.1000117

G. Febres. A Space Decomposition-Based Deterministic Algorithm for Solving Linear Optimization Problems. *Axioms* 2019, 8, 92; doi: 10.3390/axioms8030092.

G, Cadenas, Luis Hernandez-Ponce and **G. Febres**. Effects of Urban Development Praxis on Economic Inequality in Latin American Cities. *Urban Sci*. 2019, 3, 88; doi:10.3390/urbansci3030088.

G. Febres. A proposal about the meaning of scale, scope and resolution in the context of the interpretation process. *Axioms* 2018, 7, 11; doi: 10.3390/axioms7010011.

G. Febres and K. Jaffe, Music viewed by its Entropy content: A novel window for comparative analysis,. *PLoS ONE* 12(10): e0185757.https://doi.org/10.1371/journal. pone.0185757

J. Rocha, **G. Febres**. Uso de la Cibernética en un Modelo de Gestión de Conocimiento como Partida para la Optimización de los Flujos de Conocimiento en Organizaciones. *15th LACCEI International Multi-Conference for Engineering*, Education, and Technology: "Global Partnerships for Development and Engineering Education", 19-21 July 2017, Boca Raton FL, United States.

G. Febres y K. Jaffe, Quantifying structure differences in literature using symbolic diversity and entropy criteria. *Quantitative Linguistics* 2017.21.1 , DOI: 10.1080/09296174.2016.1169847

J. Rocha, **G. Febres**. Medición De Conocimiento Desde Diferentes Perspectivas Organizacionales. *2do Congreso Doctoral en Ingeniería. Cuadernos de Ingeniería. Innovación y Tecnologísa de Vanguardia 2. Universidad de Carabobo*. 2016. ISBN: 978-980-12-9518-1.

A. Pinzón,, **G. Febres.** Tiempo Promedio De Los Procesos Judiciales En Colombia Usando La Ley De Little. *2do Congreso Doctoral en Ingeniería. Cuadernos de Ingeniería. Innovación y Tecnologísa de Vanguardia 2. Universidad de Carabobo*. 2016. ISBN: 978-980-12-9518-1.

K. Jaffe and **G. Febres**. Defining synergy thermodynamically using quantitative measurements of entropy and free energy. , 2016. DOI: 10.1002/cplx.21800.

G. Febres, K. Jaffe, Calculating entropy at different scales among diverse communication systems, *Complexity*. early view (2015). doi:10.1002/cplx.21746.

G. Febres and K. Jaffe. A Fundamental Scale of Descriptions for Analyzing the Information Content in Communication Systems. *Entropy*, vol. 17, no. 4, pp. 1606-1633, 25 3 2015.

G. Febres, K. Jaffe and C. Gershenson. Complexity Measurement of Natural and Artificial Languages. *Complexity*, 2014. DOI: 10.1002/cplx.21529.

Gerardo Febres y Carlos Vinante. Bases Generales del Control Predictivo (1994). *La Universidad del Zulia*, Venezuela.

G. Febres. Control Predictivo: Efectos del bloqueo de la señal de control sobre el comportamiento del sistema (1993). Gerardo Febres. *La Universidad del Zulia*.

Books

Quantifying the Complexity of Languages. A novel Scope for the Comparative Analysis of Communication Systems. **Gerardo L. Febres**. 2016. *Scholars' Press. Saarbrücken*, Germany. ISBN: 978-3-639-85969-0.

Referee for international scientific journals

2025-2018 160+ reviews for scientific journals. For details see *https://publons.com/researcher/1388399/gerardo-l-febres/*

Some journal are: *ACM Transactions-on-Asian-and-Low-Resource Language Information Processing; Asian-journal of Probability and Statistics; Complexity; International-journal of Statistics and Probability, International-journal of environmental research-and public health; MDPI:.Applied Sciences, Computers, Electronics, Entropy, Fluids, Games, Information, IJERPH , Fluids, Journal of Personalized Medicine, Mathematics, Processes, Sustainability, Symmetry, Systems; Peer Journal of Computer Science; Physica A; Statistical Mechanics and its Applications; PLoS One*

Conferences and seminars

G. Febres and Carlos Gershenson. *Complex Systems Society Conference 2025, Siena, Italy*. Poster: Maximizing Information Extraction.

G. Febres. *Primeras Jornadas de Investigación y Desarrollo USB*. REPRESENTACIÓN DE SERIES CON PATRONES ANIDADOS. Universidad Simón Bolívar. 2024.07.02.

G. Febres. *XXXIII Jornadas Venezolanas de Matemáticas*. CARACTERIZACIÓN DE PROCESOS MEDIANTE LA REPRESENTACIÓN DE PATRONES ANIDADOS. Universidad Central de Venezuela. 2024.05.23.

G. Febres. *Complejidad e Ingeniería*. El rol de los lenguajes en nuestro desempeño. Segundo Congreso de Ingeniería y Ciencias de la Corporación Universidades del Caribe CECAR. 2017.04.05.

K. Jaffe and **G. Febres**. *Measuring synergy using entropy*. 2nd International Electronic Conference on Entropy and its Applications. 11.2015.

G. Febres, C. Vinante. *Estudio comparativo de los parámetros de supresión y bloqueo de la acción de control en controladores predictivos*. 8va Jornadas científico/técnicas de ingeniería. Maracaibo. 1992.

G. Febres, N Lomelli, A Azocar. *Filosofía de control de la distribución óptima de gas en un sistema de gas-lift*. 8va Jornadas científico/técnicas de ingeniería. Maracaibo. 1992.

M. Paz, **G. Febres**. *Simulación discreta de las operaciones del sistema de oleoductos de Maraven en la Costa Oriental del Lago*. 8va Jornadas científico/técnicas de ingeniería. Maracaibo. 1992.

G. Febres. *Distribución óptima de gas para levantamiento artificial*. Segundo Congreso del uso eficiente de la Energía y conservación en *La Universita di La Sapienza*. Roma, Italia. 1992.

J. Caldera, **G. Febres**. *Criterios de Selección para Inyección de Vapor a través del Espacio Anular*. Congreso Venezolano de Ingeniería Mecánica. Maracaibo. 1991.

Tutor of projects for the Master's Degree in Biomedical Engineering, Urban Sciences and Production Engineering Degrees.

Victor Sanchez. 2024.07. Modelo del efecto de la Ley de Pareto en el crecimiento de Empresas. Universidad Simón Bolívar.

Yahir Yarazeth Calderón Silva. 2021.09. Modelo determinístico para el estudio del sistema de conducción cardiaca en función de los canales voltaje-dependientes Final Project to qualify for the dregree of Master of Biomédical Engineering. Universidad Simón Bolívar.

Rogelio José Chinea Belisario. 2021.04. Modelos para la toma de decisiones en organizaciones en crecimiento. Final Project to qualify for the dregree of Production Engineer.

Gustavo Cadenas Delascio. 2018.04. Desarrollo urbano y desigualdad económica en Latinoamérica: aproximación desde el multiplismo crítico. Final Project to qualify for the dregree of Urban sciences. Universidad Simón Bolívar.

Stefhani Michell Pizzo Useche. 2018.11. Método descriptivo de estructuras organizacionales basado en representaciones simbólicas de sistemas complejos. Final Project to qualify for the dregree of Production Engineer. Universidad Simón Bolívar.

Academic Advisor of Internships and projects for an engineering degree.

Academic adviser of more than 30 students of Production Engineering, Mechanical Engineering performing 20-week internships in companies located in Venezuelan and European as Procter and Gamble, Coca-Cola, Biggott, Pernod Ricard, Chevron, Nestle, and others.

Horelyz Joseyn Vásquez Vera. 2022.04. Diseño de un modelo de implementación y asignación de recursos para monitoreo de transporte público. Universidad Simón Bolívar.

Karen Marie Martínez Hernández. 2021.11. Optimización de fórmulas usadas en la elaboración de pinturas para diferentes lotes de producción. Universidad Simón Bolívar.

Sara Carolina Teppa Varela. 2021.09. Desarrollo de procesos de comercialización como estrategia de crecimiento vertical aguas abajo. Universidad Simón Bolívar.

Guillermo Alejandro Lapelosa Rinaldi. 2021.09. Diseño de modelo de distribución para clientes de centro y oriente atendidos por la planta de Guatire, tomando en cuenta la implementación de operadores logísticos. Universidad Simón Bolívar.

Luis Manuel Pocaterra Sosa. 2021.07. Rediseño del sistema de gestión de control de procesos en la gestión de la flota vehicular de Nestlé. Universidad Simón Bolívar.

Andrés Alejandro Rivas Ortega. 2021.07. Diseño de un modelo de asignación de recursos para supermercados y licorerías en el departamento de ventas del área capital. Universidad Simón Bolívar.

Oscar Enrique Regalado Blanco. 2019.01. Gestión de procesos y procedimientos medulares del departamento de cobranzas de Procter and Gamble Venezuela . Universidad Simón Bolívar.

Ramón Alejandro Márquez Hernández. 2018.09. Plan de mejora continua para procesos de gestión y control de operaciones. Universidad Simón Bolívar.

Kevin Danglau Mejía Maldonado. 2018.08. Modelo genérico probabilístico para la estimación de tiempos de servicio en una ruta de reparto. Universidad Simón Bolívar.

Leonella Pilar Ritter Lista. 2018.06. Diseño de un modelo de optimización de transporte y consolidación de mercancía. Universidad Simón Bolívar.

Diego Rodríguez. 2018.02. Diseño de un nuevo modelo de gestion de inventario para una empresa comercializadora. Universidad Simón Bolívar.

Diana Alejandra Fumero Maduro. 2018.01. Implementación del sistema de gestión de la calidad y control de la documentación en la empresa chocolates Krön C.A. Universidad Simón Bolívar.

Viviana Milagros Fajardo Altuve. 2018.01. Diseño de un sistema para el control de inventarios de producto terminado en Coca Cola-Femsa. Universidad Simón Bolívar.

Jennifer Alejandra Nobrega Cardenas. 2017.12. Desarrollo de plan de producción operativo para el departamento de charcutería de Central Madeirense. Universidad Simón Bolívar.

Verónica Zanolli Baseotto. 2017.11. Estandarización del proceso de producción de sellos críticos seleccionados. Universidad Simón Bolívar.

Helen Johanna Herrera Castang. 2017.09. Desarrollo de un plan de seguimiento y mejora de la previsión de aprovisionamiento de materia prima. Universidad Simón Bolívar.

Alessandro Fornino Di Bella. 2017.09. Estudio de factibilidad de uso de polipropileno de producción nacional para el sellado de cajetillas en Bigott. Universidad Simón Bolívar.

María Virginia Pérez. 2017.07. Estudio para la localización de un nuevo centro de distribución. Universidad Simón Bolívar.

María Placeres. 2017.05. Desarrollo de propuesta para mejorar la distribución y disponibilidad en tiendas de Ariel líquido. Universidad Simón Bolívar.

Andrea Mekel Nakhal. 2017.01. Diseño de un portafolio de nuevos productos de innovación, selección y planificación de la introducción del producto. Universidad Simón Bolívar.

Constantino Ruiz. 2017.01. Propuesta de optimización, mejora de materiales y diseño de empaque primario de pañales para Latinoamérica. Universidad Simón Bolívar.

Edwin Egas Guerrero. 2016.12. Plan de continuidad operativa para una empresa del sector avicola. Universidad Simón Bolívar.

David Rodríguez Rojas. 2016.12. Desarrollo, planificación y despliegue de plan de mantenimiento para planta envasadora enfocado en mejora de rendimiento. Universidad Simón Bolívar.

Rosmary Virginia De Abreu Acevedo. 2016.09. Registro de datos en el sistema de administración de flotillas Softflot. Universidad Simón Bolívar.

Maria Carolina Pacheco. 2016.10. Mejora del portafolio de productos en cuatro mercados de la regional Pernod Ricard Emea: Grecia, Polonia, Suecia y España. Universidad Simón Bolívar.

Paula González Gago. 2016.11. Rediseño e implementación de los procesos de e-Procura en Chevron descentralizando el sistema actual. Universidad Simón Bolívar.

Diana Bracho. 1992.09. Influencia de la riqueza del gas de levantamiento artificial sobre el proceso de recuperación de líquidos. La Universidad Del Zulia.

William Hernández Chávez.1992.01. Informe de Pasantía Industrial Universidad Nacional Experimental del Táchira.

Gerardo Gamboa.1992.01. Informe de Pasantía Industrial. Universidad Nacional Experimental del Táchira.

Marisabel Paz. 1992.02. Simulación discreta de las operaciones del sistema de oleoductos de la empresa Maraven en la costa oriental del lago. La Universidad Del Zulia.

Maria Elena Albornoz.1990.06. Simulación de los sistemas de manejo de crudo Lagomar y Lagomedio. Universidad Simón Bolívar.

José Caldera. 1991.04. Criterios de selección para Inyección de vapor a través del anular. La Universidad del Zulia.

ACADEMIC EXPERIENCE

UNIVERSIDAD SIMÓN BOLÍVAR, Caracas, Venezuela 2015/09
Departamento de Procesos y Sistemas. a la fecha
Dr. Febres teaches undergraduate and postgraduate students subjects related to operations research. Specifically, linear optimization and operations management are included. Dr. Febres also teaches the Decision-Making subject that contains tools for time series forecasting, game theory, and the Analytical Hierarchy Process.

BINGHAMTON UNIVERSITY. Binghamton, New York, USA *2024/11*
School of Systems Science and Industrial Engineering. *2025/11*
Visiting professor.

UNIVERSIDAD DE CARABOBO. Valencia, Venezuela. Bogotá, Colombia *2016/04*
Facultad de Ingeniería.
Dr. Febres dictated the subject Operations Research Models for students of the Doctorate in Industrial Engineering that is offered at an international level.

LA UNIVERSIDAD DEL ZULIA, MARACAIBO, VENEZUELA *1992-1993*
Profesor de instrumentación y control industrial.
Subject included in the "Maintenance Management" program given to graduate students of mechanical, industrial, petroleum and civil engineering.

LANGUAGES

Reads writes and speaks Spanish and English.

AWARDS AND RECOGNITIONS

- Enrique Panchart 2024 Award. Recognition to the Teaching Work. Universidad Simon Bolivar,
- Enrique Panchart 2022 Award. Recognition to the Teaching Work. Universidad Simon Bolivar,
- Enrique Panchart 2019 Award. Recognition to the Teaching Work. Universidad Simon Bolivar,
- Doctoral Thesis "Quantifying the Complexity of Languages". Mention to Outstanding Thesis. Universidad Simon Bolivar, 2015.
- Silent Hoist and Crane Company. Material Handling Prize. Second place. 1989. Given in recognition of the Master thesis: "Redesign of the steering linkage assembly process for Saginaw Division. General Motors Corporation".
- Sponsorship for graduate studies at Cornell University. Granted by *Maraven* as a recognition of quality and research-oriented work.
- Number One of Quality-Star. 1986. Prize given by *Maraven* –a Petróleos de Venezuela *PDVSA*'s formerly operator company– in recognition of quality work.
- Number One of Quality. 1985. Prize given by *Maraven* –a Petróleos de Venezuela *PDVSA*'s formerly operator company– in recognition of quality work.
- Mention of Honor for the Mechanical Engineering Thesis: "Design and Modelling of a Hovercraft". Universidad Simón Bolívar, 1982.

ASOCIATIONS

- Complex Systems Society
- Laboratory of Evolution at Universidad Simon Bolivar
- Cavedatos. Informatics and Venezuelan Chamber.
- Asociación de Registradores Mercantiles de Venezuela (Venezuela Commerce Registry Association).
- Colegio de Ingenieros de Venezuela (Venezuelan College of Engineers). Inscripción Nro. 34550 Libro 153.

EXPERIENCE

Universidad Simón Bolívar. 2015/09
Caracas, Venezuela to date
Professor/Researcher at the Department of Processes and Systems.
Professor and researcher in the fields of information theory, complex systems modelling, optimization and management.

Binghamton University. 2024/11-
Valencia, Venezuela to date
Visiting Professor at the School of Systems Science and Industrial Engineering.
Delivered and fully covered the lectures on Shannon's entropy equation and May's logistic map in the *Collective Dynamics* course

Universidad de Carabobo. 2016/03
Valencia, Venezuela
Professor at the Faculty of Engineering.
Teacher of the subject Operations Research Models to Industrial Engineering Doctorate students offered at the Military University of Nueva Granada and the La Salle University at their headquarters in Bogotá, Colombia. He serves as tutor for several doctoral theses.

Universidad Simón Bolívar. 2011/01 –
Caracas, Venezuela 2015/04
Interdisciplinary Doctorate in Sciences.
This doctoral work consisted of evaluating the complexity of systems. The activities include developing methods for evaluating descriptions expressed in various types of language, such as natural languages, programming languages, music, and genetic codes. Experiments were designed to compare languages of different types by evaluating their entropy, diversity, and complexity, and regions of the entropy-diversity space corresponding to each type of language studied are specified. Experimentally, Gerardo showed that the diversity of symbols and the entropy measured from descriptions allow the construction of models capable of detecting and quantifying differences between descriptions of systems as subtle as those considered part of the form and style.

Secretaría de la Universidad Central de Venezuela. 2008/09 –
Caracas, Venezuela 2010/05
Consultant for the Installation of an Automated Electronic File.
Implemented a Workflow system to control the discussion points of the weekly meetings of the University Council. The system establishes a structure in which the collaborative work of the members of the Secretariat is harmonized and allows the detailed classification of each matter to be discussed. Various parameters of each digital document are automatically added by the system, such as keywords, sender and recipient, and dates. All information and electronic documents feed into an electronic file.

Global Recovery Group, INC. 2008- 2010
Washington D.C., USA.
Process and Information Technology Consultant.
System for document classification and automatic archiving at Global Recovery Group, a company that handles cases with pending economic matters around the world. The main offices are in the Washington, D.C. area, but its main activities are carried out in countries of Latin America, Africa, and Europe. These activities generate a significant volume of documents that the company should conveniently manage through digitization and archiving. The improvement and extension of automated activities are the primary purpose of this consultancy. 2004-2005

SUPREMA CORTE DE JUSTICIA.
PROGRAMA DE MODERNIZACIÓN DE LA JURISDICCIÓN DE TIERRAS.
Santo Domingo. Dominican Republic.
Registry Management and Automation System – SIGAR.

Consultant for the supervision of the development and startup of the *Land Registry Automation and Management System*. The project SIGAR system consists of two significant aspects: building a database of information for the eight most important Land Registry Offices of the country and developing a computerized system to monitor and control the registry's acts and operations. The system was expected to represent the historical evolution and relationship among plots, covering a time span starting from 1920, when the Torrens Land Registry System was implemented. To represent this historical land distribution process logically, Mr. Febres has developed several methods and systems that have proven successful in tackling this complex technical problem.

TIEMPO REAL, Ingeniería y Software, S.A.
Caracas, Venezuela. 1997-2010

Development manager. Reform and Modernization of the State.
Since 1995, several development needs and opportunities had been detected in the Venezuelan registry and notary sector. In 1997, Mr. Febres founded Tiempo Real, S.A., a Venezuelan company dedicated to the design and development of computerized engineering systems, initially aimed at providing workflow control for registry and notary offices. Mr. Febres designed a systems structure capable of linking the work across offices of diverse nature. His work showed that the Logical Assembly Line concept integrates the flow of information between dispersed offices without incurring enormous expenses or technologies beyond the national reach.

As an advisor to the Vice Ministry of Citizen Security, developed plans and initiated the automation and interconnection of Notary and Registry offices in Venezuela. Mr. Febres established automated operations for more than 40 registry offices, notaries, and courts. Diverse automation levels and functionalities across offices characterized the implemented system. In general, these functionalities include the management of offices through a computerized workflow, the interconnection of offices to share Prohibition Measures at a national level, and the assignment of Commercial Names for commercial registries. In total, these systems affected the daily management of some 6,000 public employees in cities and towns across the national territory.

PROEGEO S.A 1997-1998
Caracas, Venezuela.

Adviser. Environmental Sensitivity Project for Zone IV of the National Contingency Plan

I proposed improvements to the structure of the database used to serve the geographic information system of the Venezuelan National Contingency Plan.

REGISTRO MERCANTIL V DEL DTTO. FEDERAL. Y EDO. MIRANDA. 1995-1999
Caracas, Venezuela

Processes Automation Advisor
Established the operating guidelines of the Registry to enable the efficient operation of a public office of this type. Designed and structured a computerized system for the automation of operations as well as the supervision of the Mercantile Registry process, incorporating real-time monitoring elements in order to achieve strict control of operations. The developed system incorporates real-time monitoring concepts and treats the registry office as a set of 'assembly lines', in which the products are the different types of documents processed and registered, and where the objective is their processing with maximum punctuality and maintaining a high level of security. Outstanding aspects of this job were the conception of mathematical expressions and data structures capable of modeling in terms of parameters, and the interpretation of several current Laws in the field of the Venezuelan registry system.

CADMATIC S.A./ MARAVEN S.A — 1995
Caracas, Venezuela.
Adviser.
Collaborated with the development and programming of algorithms for the analysis of behaviour of complex piping and equipment networks. The resulting program "*Sistema de Planificación de Infraestructuras y Proyectos-SPIP*", is useful for the estimation of performance of the *Maraven* oil production infrastructure at long term.

CONSORCIO PROYECTA-PARSONS., PLAN MAESTRO DE AUTOMATIZACION DE LAGOVEN, S.A. — 2/1993 - 9/1994
Caracas, Venezuela.
Process Optimization Advisor.
Generated and developed several ideas for the optimization of gas treatment plants (ACOGAS and GLP-ULE plants), and participated in the definition of the optimal gas-lift distribution philosophy. Integrated the team for the development of the automation of the Jusepin oil production, gas processing, and water injection complex, Edo. Monagas, Venezuela

Information Systems Advisor.
Participated in the oil production operations conceptual modeling, looking for computerized systems for the supervision and control of transactions at *Lagoven*. Most of the work in systems design was based on James Martin's methodology.

CONTROLES INTELIGENTES DIGITALES, C.A. — 9 / 1992 - 8 / 1994
Maracaibo, Venezuela.
Engineer-Director.
Modeling and Development of new instruments for *Controles Inteligentes Digitales*, C.A. (CID), a Venezuelan company dedicated to the design and manufacturing of the FLOTEC thermal flow switches. FLOTEC sensors operate on thermal transfer principles and have numerous applications in optimization projects, oil wells, flow stations, tank yards, and other facilities typical of the petroleum industry.

MARAVEN, S.A., SUPERINTENDENCIA DE TECNOLOGIA DE OPERACIONES — 1 / 1990 - 11/ 1992
Lagunillas, Venezuela.
Chief of Technology of Production Facilities.

In charge of applying new technologies and the search for operational methods in order to increase the efficiency of the production, gas lift, thermal heavy oil recovery, dehydration, and pipeline use processes.

Diagnosis of operational problems related to production facilities, pipeline nets, and terminals; suggestion of short-term solutions. Investigated accidents that affected the production facilities.

Among the most representative results from this period are the use of thermal sensors to detect oil spills from mechanical pumping wells, the optimization of gas lift distribution, which incorporates mathematical models for each well, and the transition of control signals via SCADA systems.

MARAVEN, S.A., DEPARTAMENTO DE ESTUDIOS ESPECIALES. — 11/1985 - 12/1987
Lagunillas, Venezuela.
Member of the Study Group for Plan of Automation of Operations.
I was actively involved in the initial study for automating the Company's operations. I conducted feasibility and profitability analyses of potential areas for automation in the oil production, treatment, and transport systems and participated in the initial implementation of the automation plan.

MARAVEN, S.A., DEPARTAMENTO DE OPERACIONES DE PLANTAS. 12/1982 - 11/1985
Lagunillas, Venezuela.
Supervisor of Operations of Steam Plants.
I managed the Operations Budget of the Steam Generation Plants used for Heavy Oil Thermal Recovery. I studied and implemented several modifications to the process control, increasing the plants' overall efficiency. I also supervised operations activity personnel.

DIQUES Y ASTILLEROS NACIONALES, C.A. 1980
Puerto Cabello, Venezuela.
Intern
As a student, Mr. Febres worked in the Hull and Structures Department. I learned about quality control of welds and the replacement of anti-friction metals in bearings used in the Naval industry.