

Alfonso E. de la Fuente Ruiz, PhD MBA



Doctor of Engineering in Computer Science & Mathematics, MBA in Information Technologies Management

RESEARCHGATE: https://www.researchgate.net/profile/Alfonso_De_La_Fuente_Ruiz

LINKEDIN: <http://www.linkedin.com/in/alfonsofr>

Curriculum Vitae, short version, v. 2020

General details:

- Born in Madrid, Spain (1978), Experienced C.I.O., Consultant, Lecturer. Doctorate with three master degrees, including an MBA.

Core Education:

- **MEng: Bachelor & Master of Engineering in Computer Science** (Universidad de León, **1996-2002**, first year taken at Informatika Fakultatea in San Sebastián). Included the usual subjects being taught in engineering degrees (Algebra, Calculus, Physics, etc), plus a selection of subjects on software engineering, computer science, and telecommunication networks, with a focus on Scientific Visualization and Multimedia, as well as programming source code on several languages and technologies, such as C, C++, Borland Delphi, Java, Ada, Macromedia, D/HTML or OWL. Scored highest with Honour distinction in the subject "Knowledge Structuration" with a presentation on the topic of "The Semantic Web". Capstone Project on "*Methodologies for Multimedia Software Development*" that included the actual development of two complete interactive multimedia software applications in digital format.
- **MBA: Master in Business Administration - Information Technologies Management** (IDE-CESEM Business School, **2005-2007**). Including several subjects on Project Management, Cybersecurity, Systems Audit, Human Resources in the digital Age, e-Business, ERPs, Systems Development, Data Mining, Business Intelligence, AI, Decision Support Systems, Leadership Skills, and others. With a total duration of 600 hours, was graded at 83,4% in average. Final project was graded at 95%, on the topic of "*Automatic Systems for Knowledge Management*", and was focused on the creation of Software Factories based on Semantic Technology Software Development, later to be presented publicly at the European Semantic Technology Conference 2009 in Vienna (Austria), being sponsored by Indra systems.
- **MSc: Master of Science in Applied Mathematics** (Universidad Complutense de Madrid, **2007-2009**). Included an official course on Statistics Software by the SAS @ Institute, and several subjects such as: Data Mining, Advanced Statistics, Multipurpose Optimization, Numerical Methods, Cryptography, Relational Databases, Process Simulation, Computational Algebraic Systems for Artificial Intelligence, Artificial Vision, and Financial Mathematics (Derivatives Valuation, Stochastic Calculus, Black-Scholes formula, et al). Also involved coding in several languages and software packages, including Oracle Databases, SPSS, R, Mathematica, C, Java, Maple and MATLAB. Scholarshipped for El Escorial summer course on the topic of "Progress and Challenges of Interdisciplinary Mathematics". Participated in the *1st Modelling Week* with a bayesian application for modelling competitive (adversarial) markets.
- **PhD: Doctor of Engineering- (Operations Research**, Applied Economics department, Universidad de Burgos, **2010-2016**) with a dissertation on Artificial Intelligence Algorithms for Multiobjective Optimization ("*Multiobjective optimization of detours, heuristic fundamentals and novel applications*"), having a strong econometric component and several applications in logistics, telecommunications, project management, and finance. Scholarshipped for a project on multivariate PCA of CNC machine tools, and multidimensional visualization with Qt libraries on Linux. Scholarshipped various times to learn Mandarin Chinese, including three summer stays at CNU Beijing. Taught some subjects at Bachelor level, including Project Management, Data Structures in Java, and Artificial Intelligence in LISP. Took part on several seminars and conferences in various countries (see below). Was awarded a singular prize for the industrial applications of my PhD thesis (T-CUE Knowledge Transfer, JCYL), that included the development of a statistics application in Tableau, several functional optimization studies, and diverse philosophical and technical results, on the topic of probabilistic multi-objective optimization, in the context of applied artificial intelligence (AI).

Languages:

- **Spanish** (Native fluency - Castilian). Trained ear for various accents worldwide.
- **English** (Bilingual fluency), meritory certificate from Trinity College - London. Able to teach complex subjects in this language, as well as to seamlessly translate from and to it with great ease. Trained ear for various accents worldwide.
- **Standard Mandarin Chinese** (Advanced - HSK4 equivalent), several language certificates from Capital Normal University - Beijing, and other educational institutions. Able to read, write and speak simple sentences and to sustain short conversations.

Awards and Scholarships:

- **2002, León, Spain** Qualification of Honour in the subject “Estructuración del Conocimiento” (“Knowledge Structuration”) for the work “La web semántica” (“The Semantic Web”), 1st of January 2002, University of León. <http://tiny.cc/websemantica>
- **2007, Madrid, Spain** Awarded scholarship to attend the Summer Courses as organized by the Complutense University of Madrid at El Escorial monastery of Madrid, on the topic of “Progresos y retos de la Matemática Interdisciplinar” (“State of the art and current challenges within interdisciplinary mathematics”), 30 hours, 23-27 July 2007. http://www.mat.ucm.es/imi/activities_workshops&congresses_0607.htm
- **2007, Nairobi, Kenya** Official letter of thanks issued by the African Child Initiative and Community Development forum, related to poverty relief activities conducted at impoverished areas of rural Kenya, including irrigation projects, and the installation of a computerized classroom for a needy high-school in Machakos county, among other activities. August 2007-March 2014.
- **2010, Burgos, Spain** Scholarshipped for the “Introductory course on Chinese culture and language” organized by the Institute of Educational Formation and Innovation, University of Burgos. 30 hours from the 2nd of March to the 30th of April, 2010.
- **2010, Beijing, China** Scholarshipped for a full time, immersive Chinese language study course at the College of International Education, Capital Normal University, Beijing, People’s Republic of China, 5th of July to 13th of August 2010.
- **2010-2011, Burgos, Spain** Scholarshipped Researcher in Applied Computational Intelligence (University of Burgos). Included a research period involving studies on Principal Component Analysis (for Computer Numerical Control machine tools) and Multidimensional Visualization (using Qt libraries on Linux operating systems) during several months, at the Research Group for Applied Computational Intelligence, Faculty of Informatics, Area of Computer Systems and Languages: <http://gicap.ubu.es/>
- **2011, Beijing, China** Scholarshipped again for a full time, immersive Chinese language study course at the College of International Education, Capital Normal University, Beijing, People’s Republic of China, 1st of August to 19th of August 2011.
- **2012, Beijing, China** Scholarshipped a third time for a full time, immersive Chinese language study course at the College of International Education, Capital Normal University, Beijing, People’s Republic of China, 23rd of July to 17th of August 2012.
- **2015, Burgos, Spain** Awarded the “Doctor T-CUE prize on Knowledge Transfer applications” between academia and business, for my PhD thesis: “Multi-objective Optimization of detours, heuristics fundamentals and novel applications”, focused on the efficient solution of Operational Research problems, and the computation of diversion routes, with practical logistic applications for economic and safe, risk-aware, graph navigation, including: telecommunication of digital data, multimodal traffic, hazardous or valuable materials transportation, piracy, ambush and collision avoidance based on game theory, project management, financial portfolio optimization, and other novel uses of artificial intelligence. <https://www.redtcue.es/>

Various degrees, courses, and seminars:

- **“Microsoft Outlook”** Confemetal Foundation course on e-mail office automation software client configuration and management. 30 hours, November-December 2003.
- **“Techniques for Economic and Financial Analysis”** course by Femetal and Fundación Tripartita. 50 hours on balance sheets, treasury management, stocks valuation, assets amortization, income periodization, and other topics. January to March 2004.
- **“Relational data bases. SQL server”** Confemetal Foundation course. 32 hours, 15th -18th March 2004.
- **“How to develop a Marketing plan”** Confemetal Foundation course. 16 hours at Fundación Tripartita, 11th -14th April 2005.
- **“Congress on Opportunities for the Spanish Software Industry in the Global Economy”** organized by the Spanish Association for Quality (AEC) at the premises of the Ministry of Industry, Tourism and Commerce, Madrid, 4th -5th April 2006.
- **“Coaching (Training skills development)”** Confemetal Foundation course. 16 hours on Grow Model, Goal Setting, Key Skills, Sub/Objective Analysis, Opportunity Identification, Feedback, Profiling. Fundación Tripartita, 2nd -5th October 2006.
- **“Open standards. Eliminating risks, complexity, and costs in ICT”** conference course organized by the Computing magazine and VNU Business publications in Madrid, Spain. 6th October 2006.
- **“Planning, Implementing and Maintaining Windows Server 2003 Active Directory Infrastructure”** course given by Alhambra-Eidos. 25 hours in June 2007. <https://www.alhambra-eidos.com/>
- **“Technician in microcomputing hardware installation and maintenance”** course given by Fundación Tripartita and Royal computer S.L.; 120 hours, 10th -31st October 2007.
- **“Introduction to Statistical Analysis with the SAS® system”** official course given by a SAS corp. trainer (J. Antonio Peñalba Conde) on the premises of the Faculty of Mathematics, Complutense University of Madrid. 18 hours from October to November 2008.
- **Drawing, design and illustration course.** Included all aspects or narrative, storyboard, comic-book, page layout, aerography, drawing tools, digital painting, portraits, colouring, post-production and development. One full year of evening lessons at the prestigious Carlos Díez’s “C10” Arts Academy in Madrid, Spain, September 2007 to June 2008.
- **“External Insurance agent”** Financial Advisorship course (*Generali* insurance group – *Seguros La Estrella*). Burgos, Spain, 50 hours, November 2008. <https://www.generali.es/>
- **“Exclusive Insurance Agent”** course (*Generali* insurance group – *Seguros La Estrella*). Burgos, Spain, 150 hours, November - December 2008. <https://www.generali.es/>
- **“Advanced School on Lie and Representation Theories”.** Mathematics Institute of Seville University, Spain, 8th -12th February 2010. <https://www.imus.us.es/es/actividad/24>
- **“XIV Spanish-French Jacques-Louis Lions school on Numerical Simulation in Physics and Engineering”.** La Coruña, Spain, 6-10 September 2010. <https://dialnet.unirioja.es/congreso/4541>
- **Parallel supercomputing in CUDA with nVidia GPUs** (*Foundation Supercomputing Center of Castille and León FCSCYL, CRAI-TIC building*) course of 20 hours, including multi-threaded programming against an actual supercomputer. León, Spain, 17th -19th November 2010 <https://www.scayle.es/>

Work experience:

- **1997-1997, León, Spain** **Operating Systems Teacher for regional public officers** (Instituto La Torre) Taught the basics of programmable computers and peripherals operation, ofimatics (office automation software), and novel Microsoft operating systems and networks functionality.
- **1999-2001, Burgos, Spain** **Traffic Lighting Systems Operator** (Etralux, S. A.) several summer full-time internships, in July and August of the years 1999, 2000, and 2001. Included overseeing the traffic lights city-wide network, incident response, programming or regulators, colour cycle optimization, and telemanagement in RS-232/422 networks. Other technologies used included a Digital microVAX computer with OpenVMS operating system, a synoptic city-wide panel map, the local CCTV traffic control monitorization system, and TCP/IP Ethernet networks.
- **2002-2002, Nottingham, U.K.** **Software Solutions Provider** (B.Y.G. Systems Ltd., located in the Nottinghamshire Science and Technology Park). In the context of a "Leonardo" scholarship within the Argo program, worked full time for a semester in Web development of bespoke e-Learning multimedia courses, robotics software (GRASP), and Software Quality Assurance, including application testing and the audited reporting of software functionality issues. Also involved in the software coding of multimedia websites in Macromedia software, D/HTML, CSS, JavaScript, and ActionScript, plus multimedia kiosk deployment, and some assisting Systems Administration tasks, such as microprocessor replacement, knowledge management, backup management, and telecommunication networks operation. Some customers included Royal Bank of Scotland, UK's Department of Education, Vodafone, Debenhams, and Apollo fire detectors.
- **2003-2008, Madrid, Spain** **Systems Director** (Chief Information Officer) (Urbalux, S. A.) Urbalux is an industrial firm based in Madrid founded in 1953 with 100% spanish capital, that competes with the largests construction and servicing corporations in various industrial and urban development projects, including LT/MT electricity and outdoor lighting. Was in charge full time of managing all aspects of corporate Information and Communication Systems, including: SLAs (Service Level Agreements), ERP (SAP Business One, Navision), CAD (Computer Aided Design), GIS (Geographical Information Systems), VPN (Virtual Private Network), DBA (Database Administration), Systems Administration. Involved in overseeing, subcontracting and fine-tuning several technologies, including: Microsoft Windows servers with Active Directory, IBM DB2 databases on AS400 servers, Visual Basic, ODBC querying, T-SQL programming, Cisco VPN routing, Linux SAN servers, SCADA systems, and others. Had various responsibilities in budgetary control and human resources. Took part in different industrial projects including the Telemanagement of city-wide traffic lighting regulators for energy saving and performance optimization, Royal wedding decorations, Christmas outdoor lighting in the cities of Madrid and Burgos, Goya square subway station refurbishment, Mallorca airport landing tracks lighting, and others.
- **2009-2010, Barcelona, Spain** **Intellectual Property Manager** (Part time). ExperienceOn Ventures. Patent technical reviewer of a Natural Language Processing-based AI Reservation System for the Bliquo iOS App. This start-up and its patents was later acquired by Skyscanner.com and afterwards by Ctrip.com (See below for details)
- **2010-2010, Burgos, Spain** **University Lecturer – Computer Science Technical Engineering** (Profesor Asociado, Part time). University of Burgos, Area of Computer Systems and Languages. Taught various subjects to Computer Science Technical Engineering (Bachelor) students, including Data Structures in Java, Artificial Intelligence in LISP, and Project Management.
- **2010-2011, Burgos, Spain** **Scholarshipped Researcher in Applied Computational Intelligence** (Univ. Burgos) Included a research period involving studies on Principal Component Analysis and Multidimensional Visualization.
- **2010-2012, Burgos, Spain** **Industrial consultant and teacher.** Eibur academy; taught various bespoke on-demand courses on SAP Business Objects, Statistical Quality Control, SAP-like ERP software, and Introduction to Mandarin Chinese (details below)
- **2012-2013, Shanghai, P. R. China** **Senior University Lecturer - CS & Mathematics.** Sino-British College - Univ. of Shanghai for Science & Technology (上海理工大学-中英国际学院). Taught Mathematics and ICT (Information and Communication Technology) full time, to first year Engineering and Business students (using English as lingua franca) during 12 months, including functional analysis and optimization. Also responsible of advising students, grading and supervising exams, and all similar aspects of academic life. Took part on research activities and gave some talks on various research topics (see below for further details).
- **2014-2014, Dubai, U.A.E.** **Senior Mathematics K-12 Teacher,** (SABIS Choueifat private High School in the United Arab Emirates, دبي - الدولة الامارات العربية المتحدة). Included full time teaching of the British curriculum in Mathematics at all levels, up to level 'O' (Oxford), as well as standardized testing, grading of exams, reinforcement lessons, supervision of outstanding students from different backgrounds and ethnicities (i.e: China, Pakistan, Saudi Arabia, Bahrein, Kenya, Romania, Spain) and all similar aspects of academic life, including review of advanced mathematics textbooks, implementation of the SABIS teaching method, occasional kindergarten support lessons, and lectures on TIMMS practices (Trends in International Mathematics and Science Study).
- **2015-2020, Various locations** **Independent Consultant and Researcher.** Various customers, both remote and on-site, including providing Consultancy services for the European Science Foundation (ESF – Strasbourg, France 2019-2020)
- **2020, Bangkok, Thailand** **Foreign Lecturer in Mathematics.** Department of Mathematics, Mahidol University (ภาควิชาคณิตศาสตร์ คณะวิทยาศาสตร์ มหาวิทยาลัยมหิดล). Scientific Research activities (Multi-objective Optimization, Forecasting, Statistics), as well as lecturing in various subjects of the *Actuarial Science* and *Industrial Mathematics* programs, redacting exams, assignments and lecture notes, tutoring and grading of students' academic performance. <https://mathematics.sc.mahidol.ac.th/>