CURRICULUM VITAE

Name:	Javier Alejandro Urquizo Calderon

EDUCATION / TRAINING

Postgraduate:	Newcastle University, Newcastle, United Kingdom. Degree obtained: Doctor of Philosophy in the School of Architecture, Planning and Landscape (SAPL) - 2016.
Postgraduate:	Escuela Superior Politécnica del Litoral (ESPOL). Degree obtained: Master in Business Administration - 1999.
Postgraduate:	University of New Orleans (UNO), New Orleans, Louisiana USA. Degree obtained: Master of Science (Civil & Environmental Engineering) - 1995.
Postgraduate:	Stevens Institute of Technology, Hoboken, New Jersey USA. Degree obtained: Master of Engineering (Electrical) - 1985.
Undergraduate:	Escuela Superior Politécnica del Litoral (ESPOL). Degree obtained: Electrical Engineer. Major: Power Systems - 1982.
Registration:	International Certificate in Design, Administration and Evaluation of Projects, with a duration of 304 hours, organized by the Pontificia Universidad Católica of Ecuador and ESPOL, under the auspices of the Inter-American Development Bank IDB, 1999-2000.
Registration:	Microsoft Visual Basic .NET Technology Specialist 400 hours - 2010.
Registration:	Postgraduate Research Training (PGRT), Newcastle University, Newcastle UK – 2012.
	English course, Queens College, Flushing, New York. Fall Semester 1983.

Training courses.

- [1] II Iberoamerican course in Automation, ICI/CYTED, July 22-26, 1.996 Santa Cruz, Bolivia.
- [2] III Iberioamerican course in Automation, AEICI/CYTED, September 22-26, 1.997 Cartagena, Colombia.
- [3] ORACLE Administration, ESPOL, 2000.
- [4] System analysis using CASE ORACLE, ESPOL, 2000.
- [5] ISO 14001 Lead Assessor, Bureau Veritas, July 16-20, 2.001, Guayaquil.
- [6] Economy and the Environment seminary 40 hours CAURA FAGROMEN March 5- 9, 2.002. Guayaquil – Ecuador.
- [7] International Symposium on the Control of Electrical Loads in Distribution Systems, ESPOL, August 04-05, 2003.
- [8] Visual Studio 2008. Academia Microsoft ESPOL. 48 horas. August – September 2008.
- [9] Property Tax, March 23 to May 17, 2009, Lincoln Institute of Land Policy.
- [10] Webinar: Fast Track to a Local Low Carbon Economy, 13th May 2012, Newcastle, United Kingdom.
- [11] Webinar: EnergyPRO and EngineRoom software demonstrations, February 8, 2012, Newcastle, United Kingdom.
- [12] Customer-Led Network Revolution - Knowledge Sharing Event, Newcastle May 21, 2013, United Kingdom.
- [13] Better blogging, June 12, 2013, Newcastle University, Newcastle, United Kingdom.
- [14] Integration of LiDAR and photogrammetric data for aerial camera calibration, June 17, 2013, Newcastle University, Newcastle, United Kingdom.
- [15] Alternative Housing: the role of design, June 26, 2013, Newcastle University, Newcastle, United Kingdom.
- [16] Power electronics for the smart home, July 11, 2013, Newcastle, United Kingdom.
- [17] Social Housing Energy Management North East, October 10, 2013, Newcastle City Council, Newcastle, United Kingdom.
- [18] Community Renewable Energy, October 14, 2013, Newcastle, United Kingdom.
- [19] Community Energy Efficiency, October 15, 2013, Newcastle, United Kingdom.
- [20] Cities, Resilience and Regeneration, November 13, 2013Newcastle, United Kingdom.
- [21] Justice and Fairness in the City, December 10, 2013, Newcastle, United Kingdom.
- [22] The planning project: past, present and future, May 22, 2014, Newcastle, United Kingdom.
- [23] Photoshop, June 12, 2014, Newcastle, United Kingdom.
- [24] Modelling Long-term UK Energy Futures: Challenges and Competing Objectives, July 9, 2014, Newcastle, United Kingdom.
- [25] Making location work for Smart cities – the case for location standards, September 3, 2014, Newcastle, United Kingdom.
- [26] Sensing the city: advances in tracking technologies, September 17, 2014, Northumberland University, Newcastle, United Kingdom.
- [27] An introduction to qualitative research, September 19, 2014, Newcastle, United Kingdom.
- [28] A consultation to prepare for a new Fuel Poverty Strategy for England, September 24, 2014, National Energy Agency (NEA) Newcastle, United Kingdom.

- [29] Renewable Heating and renewable cooling, November 26, 2014, De Montfort University. Leicester, United Kingdom.
- [30] Rethinking Energy & Architecture, February 18, 2015. The University of Sheffield, Sheffield, United Kingdom.
- [31] Carbon Trust Public Sector Conference, February 25, 2015, Barbican Centre, London, United Kingdom.
- [32]Analysis of Large Datasets and Advanced Statistics in Health Research, February 27, 2015, Newcastle University, United Kingdom.

Training workshops.

- [1] Geographic Information Systems: Knowledge of and Applications, CEPEIGE, May 13-17, 1.993 Quito, Ecuador.
- [2] Basic Course for MICROSTATION PC, ONIX TRAINING CENTER, April 8-12, 1.996, Guayaquil, Ecuador.
- [3] Advanced Course for MICROSTATION PC, ONIX TRAINING CENTER, April 15-19, 1.996, Guayaquil, Ecuador.
- [4] Modular GIS Environment MGE for MICROSTATION PC, ONIX TRAINING CENTER, April 29 - May 3, 1.996, Guayaquil, Ecuador.
- [5] MGE GIS Applications Development Course, ONIX TRAINING CENTER, May 6-10, 1.996, Guayaquil, Ecuador.
- [6] Mapping Graphics Fundamentals, EBC/Intergraph, April 29-30, 1.996 Guayaquil, Ecuador.
- [7] MGE Foundation, EBC/Intergraph, May 1-3, 1.996 Guayaquil, Ecuador.
- [8] GPS Applications in Telephone Companies, ESPOL, November 18-20, 1.996, Guayaquil, Ecuador.
- [9] GPS Applications in Electrical Power Supply Companies, ESPOL, November 21-23, 1.996, Guayaquil, Ecuador.
- [10] Applying Microstation Geographics, Bentley Systems, September 19-20, 2.000, Philadelphia – Pennsylvania, USA.
- [11] Facilities Rule-Based and Application Model Management Environment FRAMME System Administration, INTERGRAPH, May 1-3, 2001, Huntsville Alabama USA.
- [12] Facilities Rule-Based and Application Model Management Environment FRAMME Data Definition, INTERGRAPH, May 7-9, 2001, Huntsville Alabama USA.
- [13] Facilities Rule-Based and Application Model Management Environment FRAMME Programming, INTERGRAPH, May 14-17, 2001, Huntsville Alabama USA.
- [14] ArcGIS, ESRI, ESRI Venezuela, 1-8 de February del 2002.
- [15] Plscadd Training, Power Line Systems, Inc., July 14-18, 2002, Portland USA.
- [16] G/Technology Administration Training, INTERGRAPH, May 30 to June 10, 2005, Guayaquil - Ecuador.
- [17] G/Technology Advanced Administration Training, INTERGRAPH, July 25-29, 2005, Guayaquil - Ecuador.
- [18] Geomedia Professional v. 6.0, INTERGRAPH, August 14-18, 2006, Huntsville, Alabama USA.
- [19] VB Development for G/Technology, INTERGRAPH, January 28-31, 2008, Huntsville, Alabama, USA.
- [20] CYMDist & CYMTCC Training session, CYME, May 12-15, 2008, Montreal Canada.
- [21] Idrisi Andes, Universidad Autónoma del Estado de México / Centro de Recursos Idrisi Méjico (UNAM), November 3-8, 2008, Toluca México.
- [22] Fundamentals I for Imagine, May 18–20, 2009, Erdas Training, Washington USA.
- [23] Fundamentals II for Imagine, May 21–22, 2009, Erdas Training Washington USA
- [24] Introduction to Leica Photogrammetric Suite, May 17–19, 2010, Erdas Training, Denver Colorado USA.
- [25] Multispectral Classification, May 20–21, 2010, Erdas Training, Denver Colorado USA.
- [26] Software carpentry, October 15–16, 2012, Digital Institute, Newcastle UK.
- [27] Go digital, November 7, 2013, Newcastle UK.
- [28] ESRI UK user conference, June 11, 2014, London UK.
- [29] Working with visual methodologies, June 23, 2014, Newcastle UK.
- [30] Public Sector Mapping Agreement. Annual Conference 2015, March 17, 2015, London UK.
- [31] Course – workshop Energy policy of sustainable development and use of the LEAP model, June 05 to 16 2017, San Carlos de Bariloche, Argentina
- [32] Power System Stability. The following stability phenomena have been studies: Frequency stability, Transient stability, Oscillatory stability and Voltage stability. DigSILENT Power Factory Training, November 20-22, 2017, Gomaringen Germany.
- [33] Dynamic Modelling: DIgSILENT Simulation Language DSL, DigSILENT Power Factory Training, November 23-24, 2017, Gomaringen Germany.

RESEARCH

Registered Research Laboratory (RLL) – Intergraph Corporation (Huntsville Alabama, USA)
   Project manager Guayaquil Digital.
   https://synergy.intergraph.com/orl/member.asp?track=402204
   Conferences as RRL.
- [1] Geospatial World 2005. Technical Presenter: 'Guayaquil Digital', San Francisco USA.
- [2] Geospatial World 2006, Orlando USA.
- [3] Geospatial World 2007, Nashville USA
- [4] Geospatial World 2008, Las Vegas USA

International Atomic Energy Agency (IEAE) Liaison officer at ESPOL regarding the following packages: Model for Analysis of the Energy Demand (MAED), Model for Energy Supply Strategy Alternatives and their General Environmental

Impacts (MESSAGE), Simplified Package for the evaluation of environmental costs of electricity generation (SIMPACT), Model for Financial Analysis of Electric Sector Expansion Plans (FINPLAN).

IBM Academic Initiative member, Power System Planning course at ESPOL.

International Journal papers (Refereed)

.

- [1] Calderon, C. James, P., **Urquizo, J**. and Mcloughlin, A. (2015) 'A GIS domestic building framework to estimate energy end-use demand in UK sub-city areas', Energy and Buildings, **96** (2015): 236–250.
- [2] **Urquizo J,** Calderon C, James P. Metrics of urban morphology and their impact on energy consumption: A case study in the United Kingdom. Energy Research & Social Science 2017, **32**, 193-206.
- [3] **Urquizo, J**. Calderon, C. and James, P. (2018) 'Understanding the complexities of domestic energy reductions in cities: Integrating data sets generally available in the United Kingdom's local authorities. Cities, **74**, 292-309.
- [4] **Urquizo J**, Calderon C, James P. Using a Local Framework Combining Principal Component Regression and Monte Carlo Simulation for Uncertainty and Sensitivity Analysis of a Domestic Energy Model in Sub-City Areas. Energies 2017, **10**(12), 1986.
- [5] **Urquizo, J.** Calderon, C. and James, P. (2017) 'Modelling household spatial energy intensity consumption patterns for building envelopes, heating systems and temperature controls in cities. Applied Energy 2018, **226**, 670-681.
- [6] **Urquizo, J.** Calderon, C. and James, P. (2018) 'An energy and poverty study of linear terraced housing in the United Kingdom', Energy and Buildings, manuscript in review.
- [7] **Urquizo, J**. Calderon, C. and James, P. (2018) 'Engineering modelling of building energy consumption in cities: Identifying key variables and their interactions with the built environment'. Environment and Planning B: Urban Analytics and City Science, manuscript in review.

Conference papers and presentations.

- [1] **Urquizo, J** (1993) 'SCADA Systems' in the INSETEC Pneumatics, Industrial Control and SCADA Systems conference, Guayaquil Ecuador
- [2] Calderon, C. James, P. and **Urquizo J.** (2013) 'An area-based GIS Energy Model for cities and neighbourhoods' in the 21st GIS Research UK (GISRUK) conference, Liverpool UK. URL:http://liverpool.gisruk.org/docs/TimeTable_Sessions_V1.4.pdf.
- [3] **Urquizo J.** (2013) 'An area-based GIS Energy Model for cities and neighbourhoods' in series 'Research and Design seminar', Newcastle upon Tyne UK. URL:http://www.ncl.ac.uk/apl/research/events/seminars.htm.
- [4] **Urquizo, J.,** Calderon, C. and James, P. (2014) 'A spatial energy model for sub-city areas', in Geo the Big Five AGI Conference: Policy, Cardiff UK. URL:http://www.slideshare.net/geoenable/06-agi-big-5-events.
- [5] **Urquizo, J.,** Calderon, C. and James, P. (2015) 'Modelling energy use in sub-city areas in the United Kingdom' in what do we know about influencing household energy use? conference, Surrey UK. URL: http://www.wholesem.ac.uk/documents/surrey-behaviour-change-workshop-programme.
- [6] **Urquizo, J**., Calderon, C. and James, P. (2015) 'Using Spatial Energy Modelling to Alleviate Fuel Poverty' in the 2015 Environmental Systems Research Institute (ESRI) UK Annual Conference, London UK. URL:http://www.slideshare.net/slideshow/embed_code/key/yEuruS6VmSoCtH.
- [7] **Urquizo, J.,** Calderon, C. and James, P. (2015) 'A spatial domestic energy framework for sub-city areas: A case study from the United Kingdom' in the 5th Symposium on Applied Urban Modelling, Cambridge UK. URL: http://www.martincentre.arct.cam.ac.uk/aum2015-booklet.pdf/at_download/file
- [8] **Urquizo, J**., Calderon, C. and James, P. (2015) 'A spatial domestic energy framework for sub-city areas: A case study from the United Kingdom' in the 2nd annual conference of the Whole Systems Energy Modelling Consortium (WholeSEM): Hybrid Energy Modelling – Linkages and Interdisciplinary, Cambridge UK. URL:http://www.wholesem.ac.uk/events/annual-conference/annual-conf-15/annual-conf-15-call-for-phd-posters.
- [9] **Urquizo, J**., Calderon, C. and James, P. (2015) 'A spatial model for domestic end-use energy diagnostic and support of energy efficiency policy to reduce fuel poverty in the UK' in the proceeding of the 2015 Environmental Systems Research Institute (ESRI) User Conference, San Diego US URL:http://proceedings.esri.com/library/userconf/proc15/papers/606_395.pdf.
- [10] **Urquizo, J**. (2015) 'The spatial domestic energy end-use framework for emerging countries: Preliminary modelling approach in Guayaquil city (Ecuador) in the 2nd International Conference on Innovative and Sustainable Architecture, Planning and Landscape, Newcastle upon Tyne UK. URL:http://conferences.ncl.ac.uk/isapl2015/abouttheconference.
- [11] **Urquizo, J.,** Calderon, C. and James, P. (2016) 'A spatial domestic energy framework for sub-city areas. A case study from the United Kingdom' in the 6th International Symposium on Energy Challenges and Mechanics. Inverness Scotland. http://nscj.co.uk/ecm6/sessions/session01.html
- [12] **Urquizo, J**. Calderon, C. and James, P. (2016) 'A spatial perspective of domestic energy consumption intensity patterns in sub-city areas: A case study from the United Kingdom', Institute of Electrical and Electronics Engineers IEEE. http://dx.doi.org/10.1109/ETCM.2016.7750848
- [13] **Urquizo, J.** Calderon, C. and James, P. (2017) 'Modelling household spatial energy intensity consumption patterns for building envelopes, heating systems and temperature controls in cities. In: 30th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2017). 2017, San Diego, CA, USA: International Measurement Confederation (IMEKO).
- [14] **Urquizo, J**. Calderon, C. and James, P. (2017) 'Modelling the spatial energy diversity in sub-city areas using remote sensors'. In: 31st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy System (ECOS 2018). 2018, Guimaraes, Portugal.

- [15] **Urquizo, J**. Calderon, C. and James, P. (2017) 'Random-effect energy regression models for clustered sub-city area fuel poverty'. In Applied Urban Modelling Symposium (AUM 2018). 2018. Cambridge. United Kingdom.

Poster Conferences.

- [1] Javier Urquizo, *"A Spatial Energy and Carbon Analysis Model for Retrofitting the Residential Sector",* in Conference *"2013 HASS Annual Conference: Knowledge crossroads",* 26th April 2013, Newcastle UK
- [2] Javier Urquizo, "*A spatial Energy and Carbon Analysis Model for Cities – Workflows*", in conference "Newcastle Institute for Research in Sustainability (NIReS) Poster Competition – Sustainability", 16th May 2013, Newcastle UK.
- [3] Javier Urquizo, "Energy efficient strategies for fuel poverty reduction in sub-city areas", in conference "2014 HASS Annual Conference: A two way street: Research, public opinion and impact", 26th June 2014, Newcastle, UK.

ESPOL papers.

- [1] Javier Urquizo. "*Participatory and decentralized strategic plan for urban and rural development of the Municipality of Salinas" in ESPOL Proposals,* 2001 (13): 21–27.

ESPOL pamphlet.

- [1] Javier Urquizo, (1986) "Digital and Analog simulation".

RESEARCH PROJECTS

ESPOL

- [1] 1.991-1.992: **Project Engineer.** "Analysis and Design of a Graphical - Text Information System applicable to Electrical Company Planning". INECEL.
- [2] 1.993: **Project Engineer**: "Making an Information Systems Development Plan for the Guayas - Los Rios Electrical Company".
- [3] 1.998: **Project Engineer**. "Control distribution energy losses in five electricity Companies EMELGUR, MILAGRO, LOS RIOS, SANTA ELENA and EL ORO.

University of New Orleans.

- [4] 1.993-1.994: **Research Assistant**: "Design and Implementation of a Structured Data System for obtaining maps from aerial photographs". University of New Orleans, USA.
- [4] 1.994-1.995: **Research Assistant:** "Programming software interfaces from an aerial digital photogrammetry station and sanitary sewer data application to the Geographic Information System". University of New Orleans, USA.

Funded research - Centre for developing projects CDP - ESPOL

- [5] 1.996: **Project manager**. "Preparation of the Digital Cartography of Guayaquil City for use of the telephone company EMETEL-R2", work to prepare for the collecting of the Inventory and data entry of the External Plant of EMETEL-R2 in the city of Guayaquil. USA 271,261.82 dollars (at conversion rate of 3,189.50 Ecuadorian sucres per dollar). Responsible for the technical management of a team of 6 engineering researchers, 16 field workers supervisors, 20 data entry workers and 353 surveyors.
- [6] 1.996-1.997: **Project manager**. "Automated Mapping and Facilities Management AM/FM of the Inventory for the External Plant of the regional telephone company EMETEL-R2 in the City of Guayaquil". USA 410,000 dollars (at conversion rate of 3,189.50 Ecuadorian sucres per dollar) Responsible for the technical management of a team of 9 engineer researchers, 3 systems analysis, 16 data entry workers and 45 field workers.
- [7] 1.997: **Project manager**. "Advising, Technological Support and applications development for the Information System of the External Plant of the regional telephone company EMETEL-R2 in Guayaquil City". 375,423.11 US dollars (at conversion rate of 3,988.53 Ecuadorian sucres per dollar). Responsible for the technical management of a team of 4 engineer researchers, 2 systems analysts and 8 data entry workers.
- [8] 1.998-1.999: **Project Head** "Census and Determination of the Category of the Subscribers of the regional telephone company Pacifictel in the City of Guayaquil". USA 750,000.00 dollars.
- [9] 1.998-1.999: Head of the Project: "Digitization of Lands and Buildings from Existing Cartography" for the Municipality of Guayaquill. USA 94,000 dollars.
- [10] 2.000: **Project manager**: "Geographic Information System for Tourism - Pilot Project in the Province of Guayas". USA 11,013.30 dollars,
- [11] 2000-2001: **Project Manager**, "Urban Planning of the City of Salinas". USA 143, 727.972 dollars.
- [12] 2.000-2006: Project Manager, "Cadastral Improvement and Development of a Geographic Information System for Multifinalitary Purposes for Santa Elena County". USA 621,244.50 dollars.
- [13] 2.001-2006: **Project Manager:** "Technical and Commercial Management of External Facilities belonging to the regional telephone company Pacifictel S.A using Intergraph's Geomedia and Integraph's Facilities Rule-Based and Application Model Management Environment (FRAMME)". USA 391,167.95 dollars.
- [14] 2.002-2.004: **Project manager**: "Inventory and Digitization of the Electric Power service availability in 46,500 properties of the City of Guayaquil for the Electricity Company of Ecuador Inc. using AM-FM / GIS systems techniques. USA 115,970 dollars

- [15] 2.003-2.006: **Project manager**: "Inventory and Digitization of Sub transmission Networks, Substations, Distribution Feeders, Secondary Networks and Meters of the Electric Company of Ecuador Inc. in the City of Guayaquil using AM-FM / GIS techniques. USA 750,000 dollars.
- [16], 2007-2008, Coordinator Guayaquil Digital Project with 14 lines of research, sponsored by the Intergraph Corporation, Huntsville USA, and with the participation of 14 students of Computer Engineering of ESPOL. Access to Intergraph suite of licences
- [17] 2008-2009: **Project Manager**: "Cadastral Improvement and Development of a Geographical Information System for Multifinalitary Purposes for La Troncal County". USA 144,659.88 dollars.

Technical Assistance to Environmental Management Program PATRA - World Bank

- [18] 2.001: Consultant in the "Implementation of a Geo-referenced Database of the Coastal Geographic Information System", for the Technical Assistance to Environmental Management Project. World Bank - PATRA. Obtained by merit contest.

United Nations Development Program (UNDP).

- [19] Consultant in Digital Cartography of the United Nations Development Program UNDP in the project ECU-094-005 "Support to the Municipality of Guayaquil", September 1995 - July 1.996. Obtained by merit contest.

  Tasks developed during this period included:

  - Introduction through training and on-site work on topics related to Digital Mapping and Geographic Information Systems.
  - Implementation of a model of Cadastral Information System, Cantonal and Urban Cartography. Elaboration of a Digital Urban Record of 70 variables.

- [20] Consultant in Digital Cartography of the United Nations Development Program UNDP in the project ECU-094-005 "Support to the Municipality of Guayaquil", November of 1997 - December 1.998. Obtained by merit contest.

  Tasks developed during this period included:

  - Implementation of an Urban Cadastral Geographic Information System, applications with geo-referenced aerial photographs, digital terrestrial photography and information from the Cadastre Alphanumeric Database. Rural Cadastre.
  - Implementation of the Urban Geographic Information System, Model for the Municipal Geographic Information System, census information.
  - Training to officials of the Office of Appraisals and Registries and the Cantonal Urban Development Plan.

- [21] Consultant in Digital Cartography of the United Nations Development Program UNDP in the project ECU-094-005 "Support to the Municipality of Guayaquil", April of 1999 - July 1.999. Obtained by merit contest.

  Tasks developed during this period included:

  - Implementation of a module for road and transportation. Geographic Information System for Planning.

- [22] 2007: 2007: UNDP. Evaluation of offers to develop a multi-purpose cadastre in the Galapagos Islands.

Intervention as Project manager or researcher in funded projects

- [23] 2000: Final Environmental Impact Study of Severino-Chone 138KV Electric Transmission Line 30km long and Chone Electric Substation for the TRANSELECTRIC National Transmission Company.
- [24] 2001: Impact Study and Environmental Management Plan for Bridge Construction Project on the Salt Estuary, in the extension of Gómez Rendón street and the Riverwalk, for the Municipality of Guayaquil.
- [25] 2001: Environmental Audit and Management Plan of Industrial Plant located in Salango, for Pesquera Polar.
- [26] 2001: Environmental Audit and Management Plan for Agricultural Development 'Lomas del Bosque', for OroGris S.A.
- [27] 2002: Preliminary Environmental Impact Study of the 138 kV Tena Electric Transmission Line – and 175 km long Jibino Electric Substation, Provinces of Napo and Orellana, for the TRANSELECTRIC National Transmission Company.
- [28] 2002: Proposal and prototype for the Los Angeles Department of Water and Power 'Transmission Asset Geographical Information System'. ESPOL/ Power Tech Engineers. Walnut California USA.
- [29] 2002: Definitive Environmental Impact Study 138 kV Tena Electric Transmission Line - 175 km long Jibino Electric Substation, Provinces of Napo and Orellana, for the TRANSELECTRIC National Transmission Company.
- [30] 2003: Final Environmental Impact Study 230 kV Milagro – Machala – border of Perú Electric Transmission Line, for the TRANSELECTRIC National Transmission Company.
- [31] 2003: Final Environmental Impact Study of the Machala Substation Expansion, for the TRANSELECTRIC National Transmission Company.
- [32] 2003: Environmental Impact Assessment for the integrated management of special and hazardous waste, consisting of collection, transport, storage, treatment (incineration) and final disposal of hospital,

chemical, industrial, pharmaceutical and similar waste, Whose treatment plant will be located in Nobol Municipality, for GADERE SA.

- [33] 2007: Project manager for positioning with dual frequency GPS equipment for the preliminary layout of the Arenillas Gas Pipeline - Border with Peru, for BPZ Houston USA.
- [34] 2009: Project manager of engineering design and architectural details of the new urban development "Sol del Inca", for the Araujo Group.
- [35] 2010: Project manager of engineering design and architectural details of the Naranjal new city Municipal market, for the Municipal Government of Naranjal.
- [36] 2010: Project manager of engineering design and architectural details of the Naranjal Municipal slaughterhouse, for the Municipal Government of Naranjal.
- [37] 2012: Research assistant for the development of a thematic map of population in the main cities of Iraq, for Dr Graham Tipple, AECOM International Development Consultant in housing and urban policy in rapidly developing countries. Newcastle University.
- [38] 2013: Research assistant for the compilation of the outline map of greater Luanda and Luanda's city Centre, for Dr Suzanne Speak, Global Urban Research Unit (GURU). Newcastle University.
- [39] 2017: (24.240,00 Euro euros) Project manager in the Deutscher Akademischer Austauschdiensthe (DAAD) Grant. The Grant is intended to finance the Study Visits by Groups of Foreign Students academic and study visit program mit der Projekt-ID 57383969.The Project will commence on 09.09.2017 and end on 20.09.2017.
- [40] 2017-2018 Tutor. Modeling, simulation and validation of the Generator Control Systems in the National Interconnected System using OpenModelica. ESPOL-CENACE.
- [41] 2017–2018 Tutor. Reliability studies in the Transmission Expansion Plan by the method of enumeration of states and Monte Carlo. ESPOL – TRANSELECTRIC.
- [42] 2017-2018. Tutor. Permanent and transitory stability studies for the connection between the Pasaje (Machala) and Posorja substations via HVDC. ESPOL – TRANSELECTRIC.
- [43] 2017-2018. Tutor. Contingency analysis using sensitivity factors in the Ecuadorian' National Transmission System. ESPOL – TRANSELECTRIC.
- [44] 2017-2018. Tutor. Identification of Parameters of Speed Regulation Systems. ESPOL – CENACE.

EXTENSION

Instructor in Training Courses facilitated in the Faculty of Engineering in Electricity and Computing - ESPOL:

- [1] C Language for UNIX-XENIX, ESPOL 04 – 08 June 1990, 15 hours, Guayaquil, Ecuador.
- [2] Introduction to C Language, ESPOL 29 January – 1 February 1991, 12 hours, Guayaquil, Ecuador.
- [3] BIOS Interruptions, ESPOL 03 – 05 July 1991, 6 hours, Guayaquil, Ecuador.
- [4] AUTOCAD, IESS, February 1993, 30 hours, Guayaquil, Ecuador.
- [5] AUTOCAD, FILANBANCO bank, June 1993, 40 hours, Guayaquil, Ecuador.
- [6] Geomedia 6.0, Municipality of Guayaquil, October 2.007, 40 hours, Guayaquil, Ecuador
- [7] Applying MicroStation Geographics, ESPOL December 2.007, Guayaquil, Ecuador.
- [8] Geomedia Professional, CNEL Corporation, 31 January – 04 February, 2011, 40 horas, Guayaquil, Ecuador.
- [9] Developing desktop applications using the Geomedia Technology, CNEL Corporation, 07 – 10 February 2011, 30 hours, Guayaquil, Ecuador.
- [10] Developing web applications using the Geomedia Web Map technology, CNEL Corporation, 11 – 16 February 2011, 30 hours, Guayaquil, Ecuador.
- [11] Introduction to Visual Studio Net, CNEL Corporation, 21 – 25 February 2011, 40 hours, Guayaquil, Ecuador.
- [12] Workflows with Geomedia Parcel Manager, CNEL Corporation, 11 – 13 July 2011, 20 hours, Guayaquil, Ecuador.
- [13] Worksflows using Geomedia Transaciton Manager, CNEL Corporation, 13 – 15 July 2011, 20 hours, Guayaquil, Ecuador.
- [14] Distribution Power Systems analysis using CYMDist, CNEL Corporation, 4 – 6 July 2011, 20 hours, Guayaquil, Ecuador.
- [15] Distribution Protective coordination Systems using CYMTCC, CNEL Corporation, 6 – 7 July 2011, 20 hours, 10 horas, Guayaquil, Ecuador.
- [16] Google Earth y utility programs, National Intelligence Secretariat, 30 May – 02 June 2011, Guayaquil, Ecuador.

WRITING FOR AN ACADEMIC DEGREE - THESIS

- [1] Engineering Degree Thesis: "*Design of the force circuit and study of the dynamic behaviour of a hypo-synchronous cascade*". ESPOL, Guayaquil, Ecuador, 1982.
- [2] Master Thesis: *"Design and implementation of a structured dataflow system for photogrammetric mapping"*. University of New Orleans, New Orleans, Louisiana. USA, 1995
- [3] Doctoral Thesis: *"A spatial domestic energy framework for sub-city areas: A case study from the United Kingdom"*. Newcastle University, Newcastle United Kingdom, 2016.

PEDAGOGICAL WORKSHOPS

- [1] Interpersonal Relations, ESPOL, July 17-19, 1987, Guayaquil, Ecuador.
- [2] Analysis of the Teacher - Student Relationship in the Teaching - Learning Process, ESPOL, August 3-8, 1987.
- [3] Micro teaching, ESPOL, February 12, 1988, Guayaquil, Ecuador.

- [4] Specific Learning Objectives, ESPOL, June 21-23, 1988, Guayaquil, Ecuador.
- [5] Audio-visuals and their importance in Education, ESPOL, November 21-25, 1988, Guayaquil, Ecuador.
- [6] Research Methodology, ESPOL, November 22-28, 1988, Guayaquil, Ecuador.
- [7] Preparation of a Course Plan, ESPOL, January 9-13, 1989, Guayaquil, Ecuador.
- [8] Methodology for Administration, ESPOL, February 13 - March 1, 1989, Guayaquil, Ecuador.
- [9] Learning Assessment, ESPOL, August 28 - September 1, 1989, Guayaquil, Ecuador.
- [10] Leadership, ESPOL, December 18-23, 1989, Guayaquil, Ecuador.
- [11] Motivation, ESPOL, January 3-4, 1990, Guayaquil, Ecuador.
- [12] Learning and teaching in Higher Education (ILTHE) Newcastle University, November 19 - 20 2013. Newcastle UK.

LECTURING ESPOL: ASISTANSHIPS, UNDERGRADUATE TEACHING, TUTOR IN GRADUATING PROGRAMS

- ESPOL, Teaching assistant in the Electric Machinery Laboratory, for the Mechanical Faculty (1980-1981).

- ESPOL, Professor in the Faculty of Electricity and Computing (1985 – to date).

  Lecturer Graduate course: Continuous-time control systems in the Master in Industrial Automation and Control program.

  Lecturer Undergraduate courses: Internal Organization of Computers, Memories and Peripherals, Automatic Control Systems I, Automatic Control Systems II, Digital Control of Processes I, Laboratory of Automatic Control, Analog and Digital Simulation, Electromagnetic Theory, Distribution Systems, Electric Power System Planning.

  Application software used in the Electric System Planning:

  The Long range Energy Alternatives Planning System (LEAP); IEAE Model for Analysis of Energy Demand (MAED); IEAE Model of Energy Supply Strategy Alternatives and their General Environmental Impacts (MESSAGE); IEAE Simplified Approach for Estimating Impacts of Electricity Generation (SIMPACTS); IEAE Model for Financial Analysis of Electric Sector Expansion Plans (FINPLAN); Advanced Energy Systems Analysis Computer Model (Energy PLAN); The RET Screen Clean Energy Management Software (Ret Screen Suite); The HOMER Pro® micro-grid software.

- ESPOL, tutor of the graduation program of Engineers in the Faculty of Engineering in Electricity and Computing for Engineers in Electricity electronic specialization [49 graduates]: Systems of Control, supervision and Data Acquisition.

  Courses [4]: Data Acquisition and Processing, Microcomputers in Control Systems, Process Control Systems, Programmable Controllers.

  1987 - 1988: [11 graduates]: Elsa Aguilar Jaramillo, Pablo Álvarez Zamora, David Delgado Rivadeneira, Wilson Pincay Carpio, José Miranda Cordero, Luis Valdez Vera, Wilson Potes Duque, Víctor Salguero Sumba, Gonzalo Naranjo Veintimilla, Arístides Ramos Benalcázar, and Wellington Méndez Espín.
  1988 - 1989: [13 graduados]: José Adrián, Jorge Barrera, Juan Castello, Fernando Espín, Roberto León, Konrad Schmidt, Gustavo Vaca, Plinio Andrade, Gonzalo Bohórquez, Xavier Duarte, Jaime Guerrero, Julio López and Juan Sotomayor.
  1989 - 1990: [17 graduates]: Wilson Baldeón, Miguel Cadena, Mauro Calderón, Víctor Córdova, Nino Dávalos, José García, Marcos Guerrero, Giovanny Icaza, Edwin Loza, Gustavo Molina, Jorge Murillo, Julio Ochoa, Carlos Ramírez, Juan Ramos, José Silva, Galo Viteri and Wilson Zúñiga.
  1990 – 1991: [8 graduates]: Javier Alovillo, María Arnés, Manuel Chaw, Cesar Espín, Vicente García, Xavier Guzmán, Miguel Ortiz and Manuel Rivadeneira.

- ESPOL, tutor of the graduation program of Engineers in the Faculty of Engineering in Electricity and Computing for Computer Engineers [55 graduates]: AM / FM / GIS systems.

  Courses [4]: Introduction to Digital Cartography, Programming of Graphics, AM / FM / GIS Systems, Advanced Programming of Graphics.

  1995: [16 graduates]: Marcia Bayas, José Cruz, Vicente Delgado, Ileana Guerrero, Marlene Heredia, Emilio Ladines, Mauricio Paredes, Héctor Peralta, Hugo Ramos. Richard Romero, Martha San Andrés, Johnny Valencia, Freddy Villao, Nelly Wither, Elke Yerovi and Ricardo Zaruma.
  1996: [15 graduados]: Caryl Carrillo, Renato Molina, René Noriega, Diocles Resabala, Alberto Carriel, Loren Resabala, Fanny Adriana Miranda, María Paola Vera, Nelson González, Karina Astudillo, Mario Naranjo, Diana Villacis, Wilson Freire, Jimmy Larrosa and Cristóbal Rodríguez.
  1997: [12 graduados]: Everett Tong Tsang, Yamile Flores Moncayo, Julia Gutiérrez Ochoa, Maritza Palma Duque, Ana Pauta Martillo, Christian Robles Chang, Soveny Soraya Solís García, Franklin Toaquiza Suque, Cecilia Tutiven Orrala, Ricardo Unda Serrano, Guillermo Veintimilla Galarza and Gloria Yerovi Zavala.
  1998 – 1999: [12 graduados]. Milton Alfredo Castro Avilés, Silvia Zea Vidal, Sylvia Moreira Núñez, Verónica Murga Jaramillo, Joe Llerena Izquierdo, Ricardo Naranjo Sánchez, Manuel Zambrano Santos, Elizabeth Viznay Zambrano, Alexander Rivadeneira Arguello, Gina Álvarez Achundia, Javier López Prado and Maritza Parrales Baquerizo.

- ESPOL, tutor of the graduation program of Engineers in the Faculty of Engineering in Electricity and Computation for Computer Engineers [5 graduates].

  Courses [4]: Use and interpretation of Aerial Photographs, Introduction to Geographic Information Systems, Digital Photogrammetry, Geographic Analysis in Geographic Information Systems.

  2.007 - 2.008 [5 graduates]: Javier Fun-sang Lomas, Raúl Choez Vélez, Carlos Tutiven Zambrano, Gianella Martínez Chillan and Pedro Zambrano.

- ESPOL, tutor of the graduation seminar of Engineers in the Faculty of Engineering in Electricity and Computing and for Industrial Engineering [32 graduates].

  Graduation Seminar for Power and Industrial Engineers: Renewable Energies Processes.

  2009: [9 graduates]. Iván Endara, A. Carrasco, G. Altamirano, Carlos Rodríguez, T. Freire, F. Gallegos, Diana Choez, Johnny Erazo and Max Anaguano.
  2010: [9 graduates]. Daniel Flores Tomalá, Ronnie Torres Badillo, Manuel Álvarez Alvarado, Marcos Pacheco Hurtado, Gabriela Salcán. Orlando Valarezo, Boris Chiriboga Erazo, Nelson Mondragón Cortez, Dalton Narváez Figueroa, Luis Triviño Nonura, Víctor Martínez and Raúl Villón.
  2011: [14 graduates]: Raúl Villón, Roberto Alvarado, Beatriz Rivas, Roberto Silva; Johnny Vásquez, Carlos Mosquera Mosquera, Luis Gerardo Verduga Rojas, Jimmy Suárez Yagual, Sergio Daniel Mendoza, Carlos Andrés Soria, Carlos Velázquez Figueroa and Marlon Zambrano Palma.

OTHER ACHIEVEMENTS

- First place in three competitions for rookies swimming tournament for the "Diario el Universo", 9 - 10 years old category, 1.969.
- First place in the intercollegiate swimming tournament, intermediate category 1,972.
- First place in national Ecuadorian selective swimming tournament, youth category 1,973.
- Ecuadorian national team to the South American swimming tournament. Río de Janeiro-Brazil 1973.
- One of six approved in the first entrance exam to ESPOL December 1975.
- First graduated of the promotion as Engineer in Electricity and second of the promotion of admitted in 1.976.
- Diploma of honour, Professor of the Faculty of Engineering in Electricity and Computing for having obtained in the last two evaluations conducted by the Centre for Educational Services CISE, a grade that is equal to or greater than the average of the Faculty. Years 1997, 1998, 1999, 2000, 2001, 2003.
- Diploma of honour as best Lecturer of the Faculty of Engineering in Electricity and computing, year 2000.

UNIVERSITY ADMINISTRATION

- Principal Member of the Directing Council of the Faculty of Engineering in Electricity and Computing, ESPOL, 1993.
- Research Coordinator, Faculty of Engineering in Electricity and Computing, ESPOL, 1993.
- Alternate Member of the Directing Council of the Faculty of Engineering in Electricity and Computing, ESPOL, 1996-2000.
- Promoter and Founding Director of the ESPOL Project Development Centre CDP. CDP is a unit in a self-financing scheme. August of 1997 to October 2011. Physical space 435 m^2, server equipment, network cabling and 43 workstations in the Campus Las Peñas (Malecón and Loja) Guayaquil. February 1995 – September 2011.
- Alternate Member of the Directing Council of the Faculty of Engineering in Electricity and Computing, ESPOL, 2010- 2011

Working address

- Faculty of Engineering in Electricity and Computing, Polytechnic Campus, km. 30.5 perimeter highway, telephone (593) 4229916, mobile (593)982226142.