

Andrés A. Zúñiga

Instituto Superior de Engenharia de Lisboa
Departamento de Engenharia Eletrotécnica de Energia e Automação
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EDUCATION

Universidade de Lisboa (*Instituto Superior Técnico*)

Lisbon, Portugal

Ph.D. in Electrical and Computer Engineering, May 2025

Thesis: Risk Analysis Framework for Cyber-Power Systems based on Fuzzy Logic and Choquet Integral Methods. Supervisors: Prof. Paulo Branco and Prof. João Fernandes. Final classification: Approved with Distinction and Honour (Aprovado com Distinção e Louvor).

Escuela Superior Politécnica del Litoral

Guayaquil, Ecuador

Electrical Engineer, specialising in Power Systems, April 2015*

Graduate project: Pronóstico de Caudales Afluentes para la Planificación de la Operación de Sistemas Hidrotérmicos de Potencia aplicando el modelo ANFIS. Supervisor: Prof. Douglas Aguirre

*Degree recognised as equivalent to a Master's degree in Electrical and Computer Engineering by the University of Lisbon, Portugal, on 21 October 2019; registration no. 320190011636.

ACADEMIC POSITIONS

Instituto Superior de Engenharia de Lisboa

Lisbon, Portugal

DEPARTMENT OF ELECTRICAL, ENERGY AND AUTOMATION ENGINEERING

Assistant Professor (Professor Adjunto), September 2026–Present.

Invited Assistant Professor, September 2025–August 2026.

Invited Lecturer, September 2024–August 2025.

Instituto Superior Técnico

Lisbon, Portugal

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Invited Lecturer, July 2020–December 2020.

Invited Lecturer, September 2018–July 2019.

Fundación Canaria Universitaria de Las Palmas

Canary Islands, Spain

Lecturer (virtual learning), September 2015–July 2022.

Escuela Superior Politécnica del Litoral

Guayaquil, Ecuador

FACULTY OF ELECTRICAL AND COMPUTER ENGINEERING

Teaching Assistant, May 2001–February 2002.

RESEARCH POSITIONS

Instituto de Engenharia Mecânica IDMEC (Polo IST)

Lisbon, Portugal

Collaborating Researcher, June 2025–Present.

Ph.D. Researcher, September 2017–May 2025.

Instituto Universitario de Sistemas Inteligentes y Aplicaciones Numéricas en Ingeniería

Canary Islands, Spain

EVOLUTIONARY COMPUTATION AND APPLICATIONS DIVISION

Collaborating Researcher, October 2013–September 2017.

Katholieke Universiteit Leuven

Leuven, Belgium

FACULTY OF ECONOMICS AND APPLIED ECONOMICS

Research Intern, March 2008–April 2008.

Escuela Superior Politécnica del Litoral
FACULTY OF ELECTRICAL AND COMPUTER ENGINEERING
Researcher, November 2008–July 2010.
Research Assistant, July 2007–June 2008.

Guayaquil, Ecuador

PARTICIPATION IN SCIENTIFIC PROJECTS

Researcher, Aliança para a Transição Energética - WP: Plataforma interoperável para a Digitalização do Sector Energético, supported by national funds through Plano de Recuperação e Resiliência. Instituto Superior Técnico. PI: Prof. Paulo Branco, September 2025–August 2026.

Collaborating Researcher, Logistic Efficiencies and Naval Architecture for Wind Installations with Novel Developments LEANWIND, supported by European Commission 7th Framework Programme for Research, Technological Development and Demonstration, participation under partnership between PLOCAN and University of Las Palmas de Gran Canaria, co-responsibility: Prof. Blas Galván. December 2013–November 2017.

Collaborating Researcher, Next Generation, Cost-Effective, Compact, Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management NEXOS, supported by European Commission 7th Framework Programme for Research, Technological Development and Demonstration, participation under partnership between PLOCAN and University of Las Palmas de Gran Canaria, co-responsibility: Prof. Blas Galván. October 2013–September 2017.

Collaborating Researcher, Estudio de evolución de posibles vertidos accidentales generados en las instalaciones portuarias de Refinería Balboa, Refinería Balboa S.A., España, participation under partnership with University of Las Palmas de Gran Canaria, PI: Prof. Blas Galván. September 2010–December 2010.

Researcher, Model for the evaluation of climate change effects on the long-term operation of hydroelectric power stations applying computational intelligence, supported by Ecuadorian National Secretary for Sciences SENACYT by grant PIC-08-00185 and Escuela Superior Politécnica del Litoral. PI: Prof. Carlos Jordán. November 2008–July 2010.

Research Intern, Evolutionary computing models applied to software testing, ITP VLIR-UOS Scholarship. Instituto Universitario de Sistemas Inteligentes y Aplicaciones Numéricas en Ingeniería. Supervisor: Prof. Blas Galván. February 2008–March 2008.

Research Intern, Software testing models, ITP VLIR-UOS Scholarship. Katholieke Universiteit Leuven. Supervisor: Dr. Monique Snöeck. March 2008–April 2008.

Research Assistant, Automatic software test data generation applying flexible evolutionary computing, supported by VLIR-ESPOL Program. Escuela Superior Politécnica del Litoral. PI: Prof. Carlos Jordán. July 2007–June 2008.

SCIENTIFIC PRODUCTION

Journal Publications

Zúñiga A.A., Fernandes J.F.P., Costa Branco P.J.C., “Comparisons Between Quantitative FMECA Methods: A Case Study on Power Transformer Risk Assessments,” *Systems* 13, no. 6: 450, June 2025. (<https://doi.org/10.3390/systems13060450>).

Cacereño, Andrés; Greiner, David, Zúñiga, Andrés; Galván, Blas, “Design and Maintenance Optimisation for Substation Communication Networks Architectures Based on IEC 61850,” *Journal of Engineering*, vol. 2024, January 2024. (<https://doi.org/10.1155/2024/9390545>).

Zúñiga A.A., Fernandes J.F.P., Costa Branco P.J.C., “A Fuzzy-based Failure Modes, Effects and Criticality Analysis applied to cyber-power grids,” *Energies* 16, no. 8: 3346, April 2023. (<https://doi.org/10.3390/en16083346>).

Zúñiga, A.A.; Baleia, A.; Fernandes, J.; Branco, P.J.D.C., “Classical Failure Modes and Effects Analysis in the Context of Smart Grid Cyber-Physical Systems,” *Energies* 13, no. 5: 1215, March 2020. (<https://doi.org/10.3390/en13051215>).

Jordán, C., Zúñiga, A., Medina, D., “Aplicación de un algoritmo evolutivo flexible a la optimización de la operación de sistemas hidrotérmicos,” *Revista Tecnológica ESPOL*, Vol. 23, N.3, pp. 35–45, December 2010.

Jordán, C., **Zúñiga, A.**, Medina, D., "Ajuste de un Modelo Lluvia-Caudal para la Cuenca Media del Río Paute Aplicando el Modelo Neuro-Difuso ANFIS," *Revista Tecnológica ESPOL*, Vol. 22, N.2, pp. 27–36, November 2009.

Jordán, C., **Zúñiga, A.**, Medina, D., "Modelo para Pruebas Automáticas de Software aplicando un Agente de Evolución Flexible," *Revista Tecnológica ESPOL*, No. 21, Vol. 1, pp. 99–104, October 2008.

Zúñiga, A., Jordán, C., "Pronóstico de caudales medios mensuales aplicando Sistemas Neurofuzzy," *Revista Tecnológica ESPOL*, No. 18, Vol. 1, pp. 17–23, October 2005.

Conference Publications

Zúñiga, A., Fernandes, J.F.P.; Branco, P.J.D.C, "A New Concordance Coefficients-Based Approach to Compare Improved FMECA Methods," Proceedings of 1st International Conference on Challenges in Engineering, Medical, Economics & Education: Research & Solutions (CEMEERS-23), Lisbon, Portugal, 21–22 June 2023. (<https://doi.org/10.17758/EIRA119>).

Zúñiga, A., Fernandes, J.F.P., Branco, P.J.D.C, "Reliability analysis of high-temperature superconducting-based aircraft turboelectric propulsion system," Proceedings of the 5th Meeting of the Young Researchers of LAETA, Lisbon, Portugal, 5–6 May 2022.

Sarquis, E., **Zúñiga, A.**, Fernandes, J.F.P., Branco, P.J.D.C, "Failure rates in photovoltaic systems: a careful selection of quantitative data available in the literature," Proceedings of the 37th European Photovoltaic Solar Energy Conference and Exhibition, online event, 7–11 September 2020. (<https://userarea.eupvsec.org/proceedings/EU-PVSEC-2020/5CV.3.49/>).

Zúñiga A.A., Fernandes J.F.P., Costa Branco P.J., "A Fuzzy-Based Failure Modes and Effects Analysis (FMEA) in Smart Grids," In: Rocha Á., Ferrás C., Paredes M. (eds) Information Technology and Systems. ICITS 2019. Advances in Intelligent Systems and Computing, vol 918. Springer, Cham, 6–8 February 2019. (https://doi.org/10.1007/978-3-030-11890-7_49).

Zúñiga, A., Rodríguez, M., Sosa, A., Galván, B., "Indicadores clave de desempeño KPIs: aplicación en bombas", XII CIBIM Congreso Iberoamericano de Ingeniería Mecánica, Guayaquil, Ecuador, 10–13 November 2015.

Zúñiga, A., Galván, B., "Indicadores clave de desempeño KPIs: aplicación en generadores eléctricos," XXIX Seminario Nacional del Sector Eléctrico ECUACIER, Machala, Ecuador, 28–30 May 2014.

Galván, B., **Zúñiga, A.**, Carmona, H., Ramos, J.P., Cacereno, A., Jiménez, I., Alonso, A., Winter, G., "PLATEA 4D: Software para la gestión integral de grandes emergencias," I Congreso Nacional de Ciencias Aplicadas al Conocimiento de los Riesgos Naturales y Antrópicos, La Libertad, Ecuador, 24–26 November 2010.

Galván, B., Salazar, D., **Zúñiga, A.**, "Indicadores para la Gestión de Mantenimiento y Confiabilidad," 1er CONGRESO ECUATORIANO DE MANTENIMIENTO 2009, Asociación Ecuatoriana de Ingeniería de Mantenimiento, Guayaquil, Ecuador, 22–24 October 2009.

Jordán, C., **Zúñiga, A.**, Medina, D., "Ajuste de un Modelo Lluvia-Caudal para la Cuenca Media del Río Paute Aplicando el Modelo Neuro-Difuso ANFIS," V CONGRESO SOBRE INGENIERIA E INVESTIGACION CIENTIFICA- V CONIIC 2009, Universidad Tecnológica del Perú, Lima, Perú, 14–16 October 2009.

Jordán, C., **Zúñiga, A.**, Medina, D., "Automatic software testing applying a flexible evolutionary agent," 6to. Congreso Internacional de Investigación en Ingeniería Eléctrica y Electrónica - VI CIIIE 2008, Instituto Tecnológico de Aguas Calientes, Aguas Calientes, México, 3–7 November 2008.

Zúñiga, A., "Optimización de la operación de centrales hidroeléctricas aplicando métodos estocásticos," Jornadas de Investigación ESPOLCIENCIA 2007, Guayaquil, October 2007 (Best Paper Award).

Zúñiga, A., Jordán, C., "Redes Adaptables y Sistemas de Inferencia Fuzzy: Una aplicación al problema de la previsión de caudales," I Congreso Nacional de Investigación, Tecnología e Innovación, Escuela Politécnica del Ejército, Quito, Ecuador October 2005.

Theses

A. Zúñiga, *Risk Analysis Framework for Cyber-Power Systems based on Fuzzy Logic and Choquet Integral Methods*, Ph.D. Thesis, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, May 2025. [Repository](#).

A. Zúñiga, *Pronóstico de caudales afluentes para la planificación de la operación de sistemas hidrotérmicos de potencia aplicando el modelo ANFIS*, Ingeniero en Electricidad Final Degree Project, Facultad de Ingeniería en Electricidad y Computación, Escuela Superior Politécnica del Litoral, April 2015. [Repository](#).

Invited Talks

Inteligência Artificial e o Futuro dos Sistemas Energéticos, Solar Week: Autoconsumo Solar 2025, Instituto Superior de Engenharia de Lisboa, Lisbon, Portugal, April 2025.

Análise dos Modos de Falha, Efeitos e Criticidade FMECA: Propostas para comparação entre métodos, IEEE PES-PT Invited Lectures, Webinar, February 2023.

Risks in power transformers: practice for fire safety, Facultad de Ingeniería en Electricidad y Computación, Escuela Superior Politécnica del Litoral, Guayaquil, Ecuador, August 2016.

RAMS technology and its importance in modern industry: applications in Electrical and Electronic Engineering, Facultad de Ingeniería en Electricidad y Computación, Escuela Superior Politécnica del Litoral, Guayaquil, Ecuador, July 2016.

Indicadores claves de desempeño: RMI (Repair and Maintenance Indicator): Una aplicación en bombas, 15º Congreso Peruano – Ingeniería de Mantenimiento, Lima, Perú, October 2015.

Other communications

Tarquínio, João P.S; **Zúñiga, Andrés**; Fernandes, João; Branco, Paulo, “Reliability Analysis of the Control and Automation Systems in Electrical Substations,” TechRxiv Preprint, 2021, <https://doi.org/10.36227/techrxiv.17014187.v1>.

Zúñiga, Andrés; Fernandes, João; Branco, Paulo, “A New Agreement Coefficients-Based Approach to Compare Improved FMECA Methods,” TechRxiv Preprint, 2021. <https://doi.org/10.36227/techrxiv.15180237.v1>.

Zúñiga, A.; Fernandes, J.; Branco, P.J.D.C, “Dynamic reliability modelling and simulation for smart distribution grids considering the impact of the cyber-power vulnerabilities,” PhD Open Days, Instituto Superior Técnico, Lisbon, 9–10 April 2019.

PEER REVIEW ACTIVITIES

Journal Reviews

IEEE Transactions on Reliability (IEEE)

Discover Vehicles (Springer Nature)

Group Decision and Negotiation (Springer Nature)

Engineering Failure Analysis (Elsevier)

Processes (MDPI)

Applied Sciences (MDPI)

Energies (MDPI)

Conference Reviews

10th International Conference on System Reliability and Safety (ICSRS 2026), August 2026.

ROPEC26: 2026 IEEE Power, Electronics and Computing Autumn Meeting, October 2026.

9th International Conference on System Reliability and Safety (ICSRS 2025), August 2025.

ROPEC25: 2025 IEEE Power, Electronics and Computing Autumn Meeting, July 2025.

ROPEC23: 2023 IEEE Power, Electronics and Computing Autumn Meeting, July 2023.

ROPEC22: 2022 IEEE Power, Electronics and Computing Autumn Meeting, August 2022.

ROPEC21: 2021 IEEE Power, Electronics and Computing Autumn Meeting, August 2021.

ROPEC20: 2020 IEEE Power, Electronics and Computing Autumn Meeting, November 2020.

ROPEC19: 2019 IEEE Power, Electronics and Computing Autumn Meeting, September 2019.

ROPEC15: 2015 IEEE Power, Electronics and Computing Autumn Meeting, July 2015.

CONFERENCE COMMITTEE MEMBERSHIPS AND SESSION CHAIRING

10th International Conference on System Reliability and Safety (ICSRS 2026) – Member of the technical committee.

26th International Conference on Environment and Electrical Engineering and 10th Industrial and Commercial Power Systems Europe (EEEIC 2026 Lisboa) – Session Chair, “Maintenance, Operation and Safety – 1”.

9th International Conference on System Reliability and Safety (ICSRS 2025) – Member of the technical committee.

PROFESSIONAL ORGANIZATIONS

Affiliate, International Federation of Automatic Control, September 2026–Present.

SUPERVISION

Ph.D. Thesis

Jorge Miguel António, *Transformer Modelling for Maintenance Support and Failure Prediction*, Instituto Superior Técnico, **Expected 2028**. Co-supervisor (with Prof. João Fernandes).

M.Sc. Thesis

Dinis Manuel Duarte Gonçalves, *Impact of Diagnostic Performance on Maintenance Decisions for Industrial Robots Under Progressive Degradation*, Instituto Superior de Engenharia de Lisboa, **Expected 2027**. Supervisor.

Rodrigo Gomes Teles Beco, *Evidence Quality and Uncertainty Representation in Reliability and Maintainability Data for Industrial Automation Components*, Instituto Superior de Engenharia de Lisboa, **Expected 2027**. Supervisor.

Ricardo Jorge da Rocha Capela, *Development of a Vision-Based Robotic System for Part Inspection and Handling*, Instituto Superior de Engenharia de Lisboa, **Expected 2027**. Co-supervisor (with Prof. Graça Almeida).

Diogo Murteira Vaz de Carvalho, *Impact of Transformer Overloading and Degradation on Power System Availability*, Instituto Superior Técnico, **Expected 2027**. Co-supervisor (with Prof. João Fernandes).

João Pedro Vicente Rei, *Reliability Analysis of Distribution Transformers*, Instituto Superior Técnico, **Expected 2026**. Co-supervisor (with Prof. João Fernandes).

Gonçalo da Rocha Lemos, *Fuzzy-based Failure Mode Effects and Criticality Analysis (FMECA) in smart grids context*, Instituto Superior Técnico, July 2021. Co-supervisor (with Prof. Paulo Branco).

Gonçalo Filipe Monteiro Lucas Júdice Crespo, *Reliability Analysis of Power Equipment in a Combined-Cycle Power Plant*, Instituto Superior Técnico, May 2022. Co-supervisor (with Prof. João Fernandes).

João Pedro de Sousa Tarquínio, *Reliability Analysis of the Control and Automation System in Electrical Substations*, Instituto Superior Técnico, July 2021. Co-supervisor (with Prof. Paulo Branco).

Professional Master's Degrees (Másteres Propios)

Master's Programme in Reliability, Maintenance and Risk Engineering (MICRO), offered by Fundación Canaria Universitaria de Las Palmas (FULP):

Francisco Gimeno Rubert, *Process Risk Analysis (PHA) for the Gas Gathering Station in the Cuervito 1 Oil Field* (in Spanish), Professional Master's Degree (Máster Propio), July 2021. Supervisor.

Claudio Montaña Angeles, *Implementation of an Asset Management System in a Petrochemical Company: A Practical Case Study* (in Spanish), Professional Master's Degree (Máster Propio), July 2019. Supervisor.

José Javier Barrera, *Initial Diagnosis for the Implementation of the Physical Asset Management Standard Aligned with ISO 55001 for Helistar de Aviación SAS* (in Spanish), Professional Master's Degree (Máster Propio), July 2018. Supervisor.

Nilton Veria-Rivero Rivero, *Optimization of the Maintenance Program for Auxiliary Equipment in a Combined Cycle Power Plant Through RCM Methodology* (in Spanish), Professional Master's Degree (Máster Propio), July 2017. Supervisor.

George Andrade Marroquín, *HAZOP Operational Risk Analysis – Solvent Extraction (SX) Plant, Arequipa Mining* (in Spanish), Professional Master's Degree (Máster Propio), July 2017. Supervisor.

Freddy Centeno Cabana, Implementation of a Reliability-Centered Maintenance Plan for the HPGR Roller Crusher, Southern Perú Company (in Spanish), Professional Master's Degree (Máster Propio), July 2017. Supervisor.

Edson Escobedo Rivero, Failure Mode and Effects Analysis of Final Drives in an Ore Haul Truck Fleet (in Spanish), Professional Master's Degree (Máster Propio), July 2017. Supervisor.

Edgar Bonilla, Implementation of a Structure and Data Capture Process Centered on Reliability (in Spanish), Professional Master's Degree (Máster Propio), July 2017. Supervisor.

David Cervantes García, Proposal for the Implementation of an Ultrasonic Meter for Natural Gas Measurement in Pipelines to Optimize Maintenance and Reduce Risk (in Spanish), Professional Master's Degree (Máster Propio), July 2017. Supervisor.

Andrés Vina García, Process Risk Analysis in the YK-0001 Sour Water Stripping Tank at the SWS 2 Plant in Petroarabig, Saudi Arabia (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Carlos Castellano Pérez, Process Risk Analysis of a Refined Petroleum Product Storage Terminal in Tapachula, Chiapas, Mexico, Complemented with Failure Mode and Effects Analysis for the Optimization of Preventive and Condition-Based Maintenance (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

José Lacayo Mendoza, Management Model for Process Safety Critical Assets (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

José Ramón Molas Flores, Risk Analysis of a Gas Metering and Regulation Station (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Vidaflor Cabada Lara, Process Risk Analysis of a Sour Gas Sweetening Plant Located on an Offshore Platform in Mexico (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Walter de Freitas Abreu, Risk Analysis of a Natural Gas Vehicle (NGV) Refueling Station (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Jean-François García, Reliability, Availability, and Functionality Study Between a Shutdown Valve (SDV) Actuated by a Digital Control Loop and an SDV in a Safety Instrumented System Control Loop Designed According to IEC-61511 (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Rafael Flores Rodríguez, Criticality Analysis of Fibranova C.A. in Macapaima, Venezuela (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

José Vivanco Quezada, Reliability Study of Dynamic Equipment Belonging to a Compressor Station in an Oil Production Asset (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Julio Melo Medina, Analysis of the Damage Mechanism in Metallic Piping Systems and Its Influence on Volumetric Commitments of the LCI Field Due to Unscheduled Shutdowns (in Spanish), Professional Master's Degree (Máster Propio), July 2016. Supervisor.

Sebastián Meneses, Application of Risk-Based Reliability Models for Optimal Maintenance Planning (in Spanish), Professional Master's Degree (Máster Propio), July 2015. Supervisor.

David Campoverde, Root Cause Analysis of the Gas Trip Phenomenon in Raw Gas Engine-Generators and Its Effect on the Operational Reliability of Power Generation Units (in Spanish), Professional Master's Degree (Máster Propio), July 2015. Supervisor.

Geovanny Ramos, Implementation of a Condition-Based Maintenance Plan for Systems and Equipment in the Aguarico Field (in Spanish), Professional Master's Degree (Máster Propio), July 2015. Supervisor.

TEACHING ACTIVITIES

University Teaching

3896 Automation II (LEE), Instituto Superior de Engenharia de Lisboa, 2nd Semester 2026/2027.

3890 Instrumentation II (LEE), Instituto Superior de Engenharia de Lisboa, 2nd Semester 2026/2027.

3068 Robotic Systems (MEE), Instituto Superior de Engenharia de Lisboa, 1st Semester 2026/2027.

3886 Instrumentation I (LEE), Instituto Superior de Engenharia de Lisboa, 1st Semester 2026/2027.

3890 Instrumentation II (LEE), Instituto Superior de Engenharia de Lisboa, 2nd Semester 2025/2026.

3886 Instrumentation I (LEE), Instituto Superior de Engenharia de Lisboa, 1st Semester 2025/2026.

3890 Instrumentation II (LEE), Instituto Superior de Engenharia de Lisboa, 2nd Semester 2024/2025.

3886 Instrumentation I (LEE), Instituto Superior de Engenharia de Lisboa, 1st Semester 2024/2025.

ERPD Renewable Sources and Distributed Power Generation (MEEC), Instituto Superior Técnico, 2nd Semester 2018/2019.

AVE Electrical Drives and Electrical Vehicles (MEEC), Instituto Superior Técnico, 2nd Semester 2018/2019.

PMee Portfólio Meec (MEEC), Instituto Superior Técnico, 1st Semester 2018/2019.

Continuing Education & Professional Master's Programs

Risk Academy: HAZOP (MICRO XV), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2021/2022.

Asset Management ISO 55000 (MICRO XV), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2021/2022.

Risk Academy: HAZOP (MICRO XIV), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2020/2021.

Asset Management ISO 55000 (MICRO XIV), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2020/2021.

Risk Academy: HAZOP (MICRO XIII), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2019/2020.

Asset Management ISO 55000 (MICRO XIII), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2019/2020.

Risk Academy: HAZOP (MICRO XII), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2018/2019.

Asset Management ISO 55000 (MICRO XII), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2018/2019.

Risk Academy: HAZOP (MICRO XI), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2017/2018.

Asset Management ISO 55000 (MICRO XI), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2017/2018.

Risk Academy: HAZOP (MICRO X), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2016/2017.

Asset Management ISO 55000 (MICRO X), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2016/2017.

Risk Academy: HAZOP (MICRO IX), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2015/2016.

Asset Management ISO 55000 (MICRO IX), Fundación Canaria Universitaria de Las Palmas, 3rd Quarter 2015/2016.

FIEC01503 Power Systems Laboratory, Escuela Superior Politécnica del Litoral, 2nd Semester 2001/2002.

FIEC01503 Power Systems Laboratory, Escuela Superior Politécnica del Litoral, 1st Semester 2001/2002.

Short Courses & Technical Workshops

Coordinator and Instructor, Fault Tree Analysis (FTA) Applied to Electrical Systems with Emergent Technologies (taught in Spanish). Course organized for the Faculty of Engineering at the University of Cuenca, online, May 4–8, 2026.

Instructor, Production, Regulation, and Price Formation in the Energy Sector (taught in Portuguese). Course organized by LCT-Luanda Consulting Team for Ministry of Energy and Water of Angola, Carcavelos, Portugal, August 3–4, 2026.

Instructor, Production, Regulation, and Price Formation in the Energy Sector (taught in Portuguese). Course organized by LCT-Luanda Consulting Team for Ministry of Energy and Water of Angola, Carcavelos, Portugal, May 4–5, 2026.

Coordinator and Instructor, Fundamentals of RAM Engineering: Application to Electrical and Electronic Systems (taught in Spanish). Course organized for the Faculty of Engineering at the University of Cuenca, online, November 14–24, 2025.

Instructor, Renewable Energy System Typologies (taught in Portuguese). Course organized by LCT-Luanda Consulting Team for Ministry of Energy and Water of Angola, Luanda, Angola, January 27–29, 2020.

Instructor, Qualitative Safety Analysis Methods (taught in Spanish). Course organized by CEANI/SIANI for Instituto Mexicano del Petróleo, online, October 12 to November 10, 2015.

PEDAGOGICAL TRAINING AND PROFESSIONAL DEVELOPMENT

Teaching Practice and Inclusive Higher Education

Autism in Higher Education I (2 hours), Universidade de Lisboa, 3 July 2026.

How to Create a Virtual Tutor for My Course? (6 hours 30 minutes), Universidade de Lisboa, 19 June 2026.

Workshop 4 – HE Introductory, Universidade de Lisboa, 1–3 October 2025.

Attention Deficit Hyperactivity Disorder in Higher Education II (2 hours 30 minutes), Universidade de Lisboa, 4 July 2025.

Attention Deficit Hyperactivity Disorder in Higher Education I (2 hours 30 minutes), Universidade de Lisboa, 3 July 2025.

Dyslexia – From Concept to Inclusion I (2 hours), Universidade de Lisboa, 25 June 2025.

Teaching STEM Students – Transformation Guide for Teaching Assistants, 1st ed., Instituto Superior Técnico, Lisbon, 13 September 2018.

Scientific Writing and Publication (21 hours), Instituto Superior Técnico, Lisbon, October 2017.

Technical and Professional Development

Georgia Tech Virtual Workshop on Energy Systems and Optimization (16 hours), Georgia Tech, USA, 10–11 December 2020.

Real-Time Applications of OPAL-RT for Power Electronics, Smart Grids and Microgrids (10 hours), School of Electrical Engineering, VIT Chennai, India, 3–7 August 2020.

Diploma en Gestión de Activos Físicos enfocado en Confiabilidad basado en la norma ISO 55000 (60 hours), GICA Ingenieros, Trujillo, Peru, 3 August–2 October 2015.

ISO 9001:2008 Módulo II: Planificación de un Sistema de Gestión de la Calidad (40 hours), Servicio Nacional de Aprendizaje (SENA), Colombia, May 2013.

ISO 9001:2008 Módulo I: Fundamentación de un Sistema de Gestión de la Calidad (40 hours), Servicio Nacional de Aprendizaje (SENA), Colombia, April 2013.

THESIS COMMITTEES AND EXAMINATION BOARDS

Master's Examination Committees

Afonso Miguel Almeida de Oliveira, *Optimization of Distributed Multi-Energy Systems Integrating Hydrogen as a Key Energy Carrier*, 2nd Cycle Integrated Project in Electrical and Computer Engineering, Instituto Superior Técnico, Universidade de Lisboa, January 2026, Advisor: Prof. Rui Castro.

António Samora Bernardo Calonga, *Electricity Supply in Isolated Areas Using Photovoltaic Panels in Angola Country Rural Communities*, M.Sc. Thesis, Instituto Superior Técnico, Universidade de Lisboa, December 2025, Advisor: Prof. Rui Castro.

ACADEMIC SERVICE AND INSTITUTIONAL CONTRIBUTIONS

Institutional Representation and Community Engagement

Local Office Coordinator in Ecuador, Universidad de Las Palmas de Gran Canaria (ULPGC), Spain, March 2010–August 2017. Representation and promotion of ULPGC research, development and innovation (R&D&I) activities and academic programmes.

University Laboratory Infrastructure

Technical laboratory staff member (Técnico Superior), Instituto Superior Técnico, 2025. Participation in the requalification of the Electrical Machines Laboratory under the DEEC project “Educação e Investigação na Mobilidade Elétrica: Um Laboratório de Referência para o Futuro do Transporte Sustentável”, including equipment for electrical-machine testing.

Technical laboratory staff member (Técnico Superior), Instituto Superior Técnico, 2023. Participation in the requalification of the Electrical Machines and Electrical Measurements laboratories under the DEEC project “Eletrificação–Eficiência Energética–Renováveis”, including equipment for experiments with green hydrogen and associated electrical measurements.

RELEVANT PROFESSIONAL EXPERIENCE

Instituto Superior Técnico

Técnico Superior, April 2021–August 2026

Lisbon, Portugal

Benemérita Sociedad Protectora de la infancia BSPI

Electric Maintenance Engineer, December 2015–July 2017

Guayaquil, Ecuador

Arq. Ricardo Rivera Chang Consulting Services <i>Electrical Design Consultant, October 2014–May 2015</i>	Quito, Ecuador
CONSTRUESPALDO S.A. <i>Electrical Inspector, June 2013–December 2013</i>	Guayaquil, Ecuador
ALEMINSA S.A. <i>Electrical Contractor, March 2011–December 2011</i>	Manta, Ecuador
Instalación de tubos de hormigón INSTUGO S.A. <i>Project Supervisor, June 2010–March 2011</i>	Guayaquil, Ecuador
Electrical Engineering Consultant <i>Independent Electrical Engineering Consultant and Contractor, July 2009–August 2017</i>	Guayaquil, Ecuador
HIDROESPOL S.A. <i>Electrical Design and Studies Engineer, April 2007–December 2007</i>	Guayaquil, Ecuador
Autocontrol S.A. <i>Operations and Supervision Chief, October 2005–January 2007</i>	Guayaquil, Ecuador
Ing. Juan Gallo Consulting Services <i>Electrical Engineering Consultant, September 2004–September 2005</i>	Guayaquil, Ecuador

LANGUAGES

English: Proficient

Portuguese: Fluent

Spanish: Native

SCHOLARSHIPS & FELLOWSHIPS

SENESCYT Doctoral Scholarship, Open Call for Graduate Studies, Government of Ecuador, March 2017.

ITP VLIR-UOS Scholarship, Flemish Interuniversity Council, Belgium, February 2008.