

Vanessa Carolina BENAVIDES LAGUAPILLO, MSc

Lecturer and Researcher (EPN) | Scientific Communicator

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📅 Nacida el 17 de Junio de 1986 en Quito - Ecuador.
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Teamwork, project management, self-learning, teaching.

EDUCATION

- 2024 **PHD Candidate in Industrial Engineering**, Universidad Nacional de Cuyo, Argentina.
Operations Research, Logistics and Vehicle Routing Problem.
Advisor: Dr. Pavel Anselmo Alvarez.
- 2020 **Seminar in Supply Chain Management**, Tecnologico de Monterrey, México.
- 2014 **Master's Degree in Production Engineering**, Universidad Federal de Pernambuco, Brazil.
Operations Research and Multicriteria Decision Analysis.
Final project: "Supplier selection based on an additive multicriteria model with partial information".
Advisor: Dr. Adiel Texeira de Almeida.
- 2011 **Diploma in Project Management**, Tecnologico de Monterrey, Sucursal Quito - Ecuador.
- 2011 **Electronics and Control Engineer**, Escuela Politécnica Nacional, Ecuador.
Automatic Control system, Predictive Control
Final project: "Development of a module for teaching model-based predictive control (MPC)".
Advisor: Ing. Patricio Burbano, MSc.
- 2004 **Bachelor**, Colegio Nacional de Señoritas "Hipatia Cárdenas de Bustamante", Ecuador.
Physical-Mathematical Sciences
Technical degree in Basic Electronics

PROJECTS

- **Research**

- From sept. 2016 to aug. 2018 Collaborator on the PIJ-15-25 project: "Study and optimization of closed-loop vector control of electrical machines and their applications.", Escuela Politécnica Nacional, 2 years
- from apr. 2009 to jul. 2009 Participation in the research project "High Altitude Platform", Energy Area, Storage and Distribution Subsystem, FAE-EPN agreement, 4 months

- **Social Projects**

- From aug. 2018 to feb. 2019 Project Director of PVS-2018-041: "Automation and Dosing by Weight and Inventory Control of Oil at MARC-SEAL S.A.", 6 months.
- From sept. 2018 to feb. 2019 Collaborator of the PVS-2018-047 project: "Study of the impact of the Bio-Feedback system of muscle signals for rehabilitation in conjunction with AMC Fisio Center.", 6 months.
- From dec. 2019 to may. 2020 Collaborator of the PVS-2019-037 project: "Comparative study between the use of the Haptic System for Active Wrist Rehabilitation versus the conventional method in the Huellas Physiotherapy Offices", 6 months.

Present sept. 2015	Lecturer, ESCUELA POLITÉCNICA NACIONAL, Quito - Ecuador I worked in the Department of Automation and Industrial Control at the Faculty of Electrical and Electronic Engineering, developing the following activities: ➤ Industrial Control Laboratory Administrator: preparation of laboratory guide sheets, public procurement processes, preparation of laboratory equipment and upgrading projects. ➤ Support in the development of the remodeling project for the Industrial Process Control laboratory. ➤ Coordinator of the Subjects: Fundamentals of Electrical Circuits (3 semesters), Industrial Control (3 semesters) and Analysis of Electrical Circuits (3 semesters) ➤ Member of the Liaison Committee: responsible for obtaining agreements with other institutions and companies ➤ Design and development of maintenance plans for the following laboratories: Industrial Process Control, Electrical Circuits, Industrial Control ➤ Direction and grading of thesis works ➤ Participation in the adoption of the standard “Active Electricity Meters - Part 1: Metrological and Technical Requirements / Part 2: Metrological Controls and Performance Tests” as representative of the EPN in the Ecuadorian Standardization Service (INEN) ➤ Collaboration as a reviewer of scientific publications for: ◦ Latin American Congress on Automatic Control 2018. ◦ Electrical and Electronic Engineering Conference - JIEE 2017, 2019. ◦ IEEE Ecuador Technical Chapters Meeting – ECTM 2017, 2018, 2019.
sept. 2015 apr. 2015	Senior Operations Analyst, CITIBANK, Quito - Ecuador. I worked in the Operations and Technology Risk and Control-OTRC area, collaborating on the development of bank processes for submission to the Superintendency of Banks. I was responsible for compiling supporting documents for each process, as well as coordinating and planning meetings with experts from each area.
dec. 2012 jun. 2012	Electronic Engineer, SURGE INGENIERÍA, Quito - Ecuador. I worked in the company's Project Coordination area, supporting the management of several data center implementation projects. I planned, monitored, and controlled each project, taking into account the scope, timeframe, costs, resources, and risks of each project. One of the projects I worked on was the implementation of the data center for Petroecuador EP in Quito, including its governance processes and contingency plans.
aug. 2012 nov. 2011	Lecturer, UNIVERSIDAD DE LAS AMÉRICAS, Quito - Ecuador. Within the Technology in Industrial Production and Safety program, I taught Industrial Automation.
mar. 2011 oct. 2011	Technical Service Engineer, TECNUS MANTENIMIENTO TÉCNICO INDUSTRIAL Cía. LTDA., Quito - Ecuador. Responsible for the coordination and planning of preventive and corrective maintenance of laboratory equipment such as: chromatographs, spectrophotometers, microscopes, etc. in the Sierra region. Technical Service Support for preventive and corrective maintenance, as well as for the installation of laboratory equipment and instruments, as well as for maintaining records. Direct contact with customers.
feb. 2011 aug. 2009	Laboratory Instructor, ESCUELA POLITÉCNICA NACIONAL, Quito - Ecuador. I worked in the Department of Automation and Industrial Control at the Faculty of Electrical and Electronic Engineering, preparing equipment and leading sessions in the following laboratories: ◦ Industrial Process Control, ◦ Microprocessor Control, ◦ Electrical Technology, ◦ Interfaces for Industrial Communication. I also collaborated in the organization and logistics of the 5th Euro-Latin American Seminar on Engineering Systems (SELASI).

may. 2009	Research Assistant, OBSERVATORIO ASTRONÓMICO DE QUITO, Quito - Ecuador.
aug. 2009	Participated in the “High Altitude Platform” scientific research project, led by the FAE Research and Development Center (CIDFAE) and funded by the National Secretariat of Science and Technology (SENACYT). I collaborated in the Energy - Storage and Distribution Subsystem Area, where I conducted a feasibility study for the photovoltaic energy system and developed the initial designs for energy control and storage. Collaborated in the implementation of the Quito Astronomical Museum for its official inauguration.
oct. 2008	Intern, SCHLUMBERGER SURENCO, Quito - Ecuador.
ago. 2008	I collaborated as an IPM (Integrated Project Management) assistant in the drilling engineering department, updating the drilling operations database for the Block 15 project using Osprey Reports software.

RESEARCH GROUPS

- Group of Engineering in Decision-Making and Artificial Intelligence - GEDAI (Brazil)

AFFILIATIONS/SOCIETY

- IEEE (Institute of Electrical and Electronics Engineers):
 - **Member** and *Mentor Women in Engineering (WIE)*; 2021
 - **Graduated Student Member**, Intelligent Transportation Systems Society Membership (ITSS) and Young Professionals (YP) and *Mentor Women in Engineering (WIE)*; 2025
- REMCI (Ecuadorian Network of Women Scientists):
 - **Member** since 2023
- OWSD (Organization for Women in Science for the Developing World) - Chapter Ecuador
 - **Member** since 2024
- SEDEM (Ecuadorian Society of Mathematics):
 - **Member** since 2025

COMPLEMENTARY TRAINING - MANAGEMENT COURSES

dec. 2020 (40 h)	Entrepreneurship in STEM, <i>Universidad San Francisco de Quito y Women in STEM Entrepreneurship (WISE)</i> .
may. 2020 (40 h)	Project Management with Agile Methodologies, <i>Fundación Telefónica</i> .
jun. 2019 (9 h)	From 0 to 100 with your entrepreneurship, <i>Escuela Politécnica Nacional – MIT REAP y Asobanca</i> .
mar. 2019 (15 h)	Time Management, <i>Escuela Politécnica Nacional – Vicerrectorado de Docencia</i> .
apr. 2018 (32 h)	Strategic Planning and Balanced Score Card, <i>Escuela Politécnica Nacional – Centro de Educación Continua</i> .
nov. 2017 (32 h)	National Workshop on Drafting Patent Applications, <i>Organización Mundial de Propiedad Intelectual – Instituto Ecuatoriano de Propiedad Intelectual</i> .
apr. 2017 (48 h)	High Impact Leadership, <i>Escuela Politécnica Nacional – Centro de Educación Continua</i> .
mar. 2017 (20 h)	Coaching for Middle Management, <i>Escuela Politécnica Nacional – Vicerrectorado de Docencia</i> .
sep. 2016 (20 h)	Smart Habits for Successful Professionals, <i>Escuela Politécnica Nacional – Vicerrectorado de Docencia</i> .
mar. 2016 (64 h)	PNL – Tools for Personal Development, <i>Escuela Politécnica Nacional – Centro de Educación Continua</i> .
mar. 2016 (64 h)	Effective Negotiation Techniques, <i>Escuela Politécnica Nacional – Centro de Educación Continua</i> .

COMPLEMENTARY TRAINING - WEBINARS

- aug. 2020 (1 h) Transform assessment into learning, *Turnitin*.
- aug. 2020 (2 h) Solutions for residential electrical distribution, *ABB*.
- jun. 2020 (2 h) Agile Project Management in Today's World: Moving Toward Agility, *Project Management Institute Capítulo México*.
- may. 2020 (2 h) Techno-educational strategies in times of force majeure, *Turnitin*.
- apr. 2020 (1 h) Migrating to online education with academic integrity, *Turnitin*.

COMPLEMENTARY TRAINING - TEACHING COURSES

- nov. 2020 (48 h) MOOC: creating teaching learning environments with Google Classroom, *Escuela Politécnica Nacional – Centro de Educación Continua*.
- may. 2020 (64 h) Design and assembly of virtual classrooms in Moodle, *Escuela Politécnica Nacional – Centro de Educación Continua*.
- may. 2020 (64 h) Flipped Classroom: an innovative pedagogical experience, *Escuela Politécnica Nacional – Centro de Educación Continua*.
- apr. 2020 (2 h) Synchronous Communication with Teams and Zoom, *Escuela Politécnica Nacional – Centro de Educación Continua*.
- apr. 2020 (2 h) Synchronous Communication with Webex and its training license, *Escuela Politécnica Nacional – Centro de Educación Continua*.
- dec. 2019 (8 h) Good laboratory practices, *Centro de Formación: Corporación Q*.
- mar. 2018 (20 h) Fundamentals of Learning in the University Environment, *Pontificia Universidad Católica del Ecuador*.
- oct. 2017 (15 h) Methodologies for Participatory Learning, *Escuela Politécnica Nacional – Vicerrectorado de Docencia*.
- apr. 2017 (48 h) Tools for the Design of Teaching Materials, *Escuela Politécnica Nacional – Centro de Educación Continua*.
- apr. 2016 (40 h) 2nd Methodological Workshop on Strategies for Publishing in High-Impact Indexed Journals, *Escuela Politécnica Nacional – Vicerrectorado de Investigación y Proyección Social*.
- apr. 2016 (20 h) Curricular adaptations for the inclusion of students with special educational needs, *Escuela Politécnica Nacional – Facultad de Ingeniería en Sistemas*.
- jun. 2012 (20 h) Learning with Case Method, *Laureate International Universities*.
- jun. 2012 (20 h) Project-Oriented Learning I, *Laureate International Universities*.
- apr. 2012 (20 h) Collaborative Learning, *Laureate International Universities*.
- apr. 2012 (20 h) Problem-Based Learning, *Laureate International Universities*.
- mar. 2012 (h) Workshop “How to create a competency-based syllabus”, *Universidad de las Américas*.

COMPLEMENTARY TRAINING - TECHNICAL TRAINING COURSES

nov. 2020 (48 h)	Microsoft Excel Advanced, Macros and Pivot Tables, <i>Escuela Politécnica Nacional – Centro de Educación Continua.</i>
may. 2017 (16 h)	International Seminar on Process Control with MPS PA Reactor Station, <i>FESTO.</i>
apr. 2016 (20 h)	Modicon M580 PLC Applications with Unity, <i>Escuela Politécnica Nacional - Departamento de Automatización y Control Industrial.</i>
feb. 2016 (30 h)	Unity with Application to Modicon 580 PLC, <i>Escuela Politécnica Nacional - Departamento de Automatización y Control Industrial.</i>
dec. 2011 (h)	Ecodial – Software Schneider, <i>Schneider.</i>
mar. 2010 (2 h)	Vibration Analysis in Rotating Machines with Labview, <i>Escuela Politécnica Nacional – ISA EPN.</i>
feb. 2010 (32 h)	Simantic Step 7 Profesional, <i>SIEMENS.</i>
nov. 2009 (16 h)	Identification, Modeling and Digital Process Control, <i>Escuela Politécnica Nacional – Departamento de Automatización y Control Industrial.</i>
nov. 2009 (16 h)	Advanced Control Techniques Seminar, <i>Escuela Politécnica Nacional – Departamento de Automatización y Control Industrial.</i>
feb. 2009 (30 h)	AutoCAD 2D, <i>Escuela Politécnica Nacional – Facultad de Ingeniería Mecánica.</i>
nov. 2008 (16 h)	Programming Intouch 7.1 Básic, <i>Escuela Politécnica Nacional – DACI.</i>
ago. 2008 (40 h)	New Employee Safety Training, <i>SCHLUMBERGER Surenco S.A. – QHSE Coca.</i>
jun. 2008 (8 h)	Introduction to Virtual Instrumentation with LabVIEW, <i>National Instruments.</i>
mar. 2008 (20 h)	Microcontroller Management ATMEL - AVR (atmega16), <i>APM (All Power Microcontroller).</i>
jan. 2008 (10 h)	Matlab Seminar Applied to Signal and Systems Analysis, <i>Escuela Politécnica Nacional - Departamento de Automatización y Control Industrial.</i>
nov. 2007 (16 h)	Oil and Gas Process Variables for Control Engineers, <i>Escuela Politécnica Nacional – Facultad de Ingeniería Eléctrica y Electrónica.</i>
aug. 2006 (32 h)	Industrial Automation and Control, <i>Escuela Politécnica Nacional – Departamento de Ingeniería Mecánica y Petróleos.</i>
mar. 2006 (60 h)	Semiconductors – Electrónica I, <i>Secap.</i>

- **Speaker**

- jun. 2021 I Meeting of Women in Engineering, IEEE Women in Engineering (IEEE-UTN student branch).
- may. 2021 Future of Online Education, Red Divulga-ciencia.
- jun. 2018 V International Congress on Science, Technology, Entrepreneurship and Innovation (ESPOCH).
- jun. 2013 International Promoter of the Yasuni ITT Initiative at the First Meeting on Environmental Law, Universidad Joaquim Nabuco, Recife-Brazil.
- feb. 2010 The New Information and Communication Technologies Fair, organized by CONQUITO, 24, 25 y 26 de February del 2010.
- dec. 2009 I Science and Technology Fair SENACYT, 11, 12 y 13 de December 2009.
- feb. 2009 V Ecuadorian Robotics Competition 2009.

- **Participant**

- sept. 2020 (5 h) Active Methodologies in the New Educational Models of STEM Careers, *EPN – Ecuadorian Association of Engineering Teaching Institutions*.
- nov. 2019 (20 h) XXIX Electrical and Electronic Engineering Conference, *Escuela Politécnica Nacional*.
- nov. 2019 (20 h) International Congress I+D+i Energy Sustainability, *Geological and Energy Research Institute*.
- jun. 2019 (2 h) Conference "The Role of Universities and Research in Healthy Innovation and Entrepreneurship Ecosystems", *Escuela Politécnica Nacional – MIT REAP*.
- nov. 2018 (20 h) XXVIII Electrical and Electronic Engineering Conference, *Escuela Politécnica Nacional*.
- oct. 2018 (20 h) XVII Latin American Congress on Automatic Control (CLCA), *International Federation of Automatic Control – Escuela Politécnica Nacional*.
- nov. 2017 (20 h) XXVII Electrical and Electronic Engineering Conference, *Escuela Politécnica Nacional*.
- mar. 2017 (8 h) Seminar on Energy Efficiency and Use of Renewable Energy in Industry, Mining, Oil, and Tourism, *Ecuadorian-German Chamber of Industry and Commerce*.
- jul. 2016 (h) Technology, Entrepreneurship, and Innovation Meeting: TEI-2016, *Escuela Politécnica Nacional*.
- jul. 2016 (20 h) XXVI Electrical and Electronic Engineering Conference, *Escuela Politécnica Nacional*.
- feb. 2015 (40 h) ELAVIO 2015 (Summer School on Operations Research), *Latin-Ibero-American Association of Operational Research (ALIO)*.
- aug. 2010 (h) Conference on ITAIPU Hydroelectric Power Plant - Binational, *Central Hidroeléctrica ITAIPU – Binacional, Brasil-Paraguay*.
- nov. 2009 (30 h) V Euro-Latin American Seminar on Engineering Systems and Their Application to Energy Production, *Escuela Politécnica Nacional – Escuela Politécnica del Ejército*.
- jun. 2009 (h) XXII Electrical and Electronic Engineering Conference, *Escuela Politécnica Nacional*.

RECOGNITIONS AND AWARDS

- 2024 Third place in the “Solo de Ciencia 2024” Scientific Monologue Competition.
- 2018 Reviewer for the Latin American Congress on Automatic Control - CLCA
- 2017-2019 Reviewer for Electrical and Electronic Engineering Conference - JIEE.
- 2017-2019 Reviewer to IEEE Ecuador Technical Chapters Meeting – ECTM
- 2016 Participation in the adoption of the standard “Active Electric Meters - Part 1: Metrological and Technical Requirements / Part 2: Metrological Controls and Performance Tests” coordinated by the Ecuadorian Standardization Service.
- 2015 Fellow selected for the Operational Research Summer School - ELAVIO.
- 2013 Reviewer of the Polytechnic Journal.
- 2013 Fellow Senescyt.
- 2013 International Promoter Yasuní ITT.
- 2011 Graduated in engineering with a cum laude degree.
- 2010 Founding member and Student Representative of the EPN Robotics Club.
- 2010 Founding Vice President of the ISA-EPN Student Branch (International Society of Automation).
- 2009 Winner of a scholarship to study Portuguese, Municipality of Quito.
- 2001-2002 Best Student Medal in the Department of Physics and Mathematics, Hipatia Cárdenas de Bustamante School.
- 1998 Best Graduate, Class of 1997-1998, “Teodoro W. Anderson” School

LANGUAGES

Native

Spanish



Instituto Brasileiro-Ecuatoriano de Cultura (IBEC)

Portuguese



Escuela Politécnica Nacional – CEC

English



- Indexed journals

Vallejo, J., **Benavides, V.**, Pozo, M. (2019). *Combined Circuit Model for a Four Quadrant Operating Luo-Converter*, Revista Politécnica, vol.44, n.2, pp.51-54. ISSN 2477-8990, <https://doi.org/10.33333/rp.vol44n2.06>.

Pilataxi Piltaxi, J.I., Trujillo Guerrero, M.F., **Benavides Laguapillo, V.C.**, Rosales Acosta, J.A. (2019). *Human Activity Recognition Using an Accelerometer Magnitude Value*, Communications in Computer and Information Science, 2020, 1194 CCIS, pp. 462–472, DOI : 10. 1007/978-3-030-42520-3_37.

Espinosa, P., Pilataxi, J., Morales, L. and **Benavides, V.** (2019). *Vehicle Security and Alert System, Based on Facial Recognition and GPS Location*, In: 2019 International Conference on Information Systems and Computer Science (INCISCOS), Quito, Ecuador, 20-22 Nov 2019, pp. 222-229, doi: 10. 1109/INCISCOS49368. 2019. 00043.

Benavides, V., Trujillo, M., Pozo, M., Chasi, C. and Chavez, G. (2018). *Tests of Hermeticity in Luminaires System of Public Lighting for the Laboratory of Lighting of the INER*, In: 2018 International Conference on Information Systems and Computer Science (INCISCOS), Quito, Ecuador, 13-15 Nov 2018, pp. 107-114, doi: 10. 1109/INCISCOS. 2018. 00024.

- Conference papers

Vallejo, J., **Benavides, V.** and Pozo, M. (2019). *Modelo de Circuito Combinado Para Operación en Cuatro Cuadrantes, Convertidor de Luo*, In: XXIX Jornadas de Ingeniería Eléctrica y Electrónica, Quito, Ecuador, ISBN: 978-9978-383-49-0.

Trujillo, M. and **Benavides, V.** (2018). *Re-Processing of Medical Images Based on Intensification Using Histogram Methods for Computer-Aided Diagnosis*, In: Libro de memorias del V Congreso Internacional de la Ciencia, Tecnología, Emprendimiento e Innovación (ESPOCH), Riobamba, Ecuador, 25-26 Junio 2018, pp. 238-249, ISBN: 978-9942-8697-5-3.

Yerovi, I., **Benavides, V.** and Pozo, M. (2017). *Automatización de la Máquina para Ensayos de Energía de Penetración en Neumáticos Tipo 2 y Tipo 3 de la Metalmecánica de San Bartolo de la EPN.*, In: XXVII Jornadas de Ingeniería Eléctrica y Electrónica, Quito, Ecuador, ISBN: 978-9978-383-49-0.

Nepomuceno, T., **Benavides, V.**, Sousa, P., Bertotti, J. (2014). *Escalonamento Dinâmico de Processos sobre o Planejamento Estratégico e Operacional das Organizações: Uma Aplicação sobre os Recursos dos Programas de Pós-Graduação da Universidade Federal de Pernambuco*, In: XXXIV Encontro Nacional de Engenharia de Produção, Curitiba, Brasil, ISSN ENEGEP: 2594-9713.

REFERENCES

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