

# Curriculum Vitae

## Luis Diego Murillo-Soto

CFIA Member: IMI-9821  
IEEE Member: 94891290  
Costa Rica Section

[lmurillo@tec.ac.cr](mailto:lmurillo@tec.ac.cr)  
[luis.d.murillo@gmail.com](mailto:luis.d.murillo@gmail.com)

Phone: (506) 2550-9347  
Mobile: (506) 8828-9887



url Google scholar : <https://scholar.google.com/citations?user=BH7IMGAAAAAJ&hl=es>  
url ResearchGate : [https://www.researchgate.net/profile/Luis\\_Diego\\_Murillo-Soto](https://www.researchgate.net/profile/Luis_Diego_Murillo-Soto)  
url ORCID: <https://orcid.org/0000-0002-6601-1082>

## Description

Luis Diego Murillo is full professor at the Costa Rica Institute of Technology and works since the 2004. He is pursuing a doctoral degree in Engineering in the topic of faults diagnosis and reconfiguration of solar arrays. He participated as researcher in seven institutional projects and now he is working in two additional projects related with his doctoral project.

Doctor of Engineering Candidate	(Dr.-Eng. C)	2017- 2019
Costa Rica Institute of Technology		Costa Rica
Master of Science in Electric Engineering	(M.Sc)	2006- 2016
University of Costa Rica		Costa Rica
Master of Computing	(M.Eng)	2002- 2004
Costa Rica Institute of Technology		Costa Rica
Bachelor in Electro-mechanic Engineering	(B. Eng)	1995- 1998
Costa Rica Institute of Technology		Costa Rica
Technician in Industrial Electronics	(Tech.)	1992-1994
COVAO, Vocational High School		Costa Rica

## Research Experience

Researcher (8 hours peer week) <i>Diagnosis and fault management in solar panel arrays based on lightweight algorithms: under the edge computing paradigm.</i> University grants, code: VIE 5402-1341-1701	2019-2020 Costa Rica Institute of Technology
Researcher (20 hours peer week) <i>Electronic power card to manage electrical connections of two strings in a solar array.</i> University grants, code: VIE 5402-1341-1601	2017-2018 Costa Rica Institute of Technology
Researcher (8 hours peer week) <i>Synthesis of the fault diagnoser in a discrete events system using colored petri nets.</i> University grants, code: VIE 5402-1801-0505	2015-2016 Costa Rica Institute of Technology
Research Assistant (8-20 hours peer week) <i>Expert system for the diagnosis of electric motors</i> University grants, code: VIE 5402-1341-1301	2012-2015 Costa Rica Institute of Technology
Researcher (8 hours peer week) <i>Design and implementation of the algorithm to control two flexible manufacturing cells, using the method matrix based approach.</i> University grants, code: VIE 5402-1341-1101	1/2011-12/2011 Costa Rica Institute of Technology
Research Assistant (8 hours peer week)	1/2011-12/2011

<i>Design of a method of identifying the causes of failures in electric motors based on post-mortem evidences.</i> University grants, code: VIE 5402-1341-1201	Costa Rica Institute of Technology
Research Assistant (8 hours peer week)	1/2010-12/2010
<i>Experiments to obtain fault models in three-phase induction motors.</i> University grants, code: VIE 5402-1341-1001	Costa Rica Institute of Technology
Research Assistant, (8 hours peer week)	1/2005-12/2005
<i>Analysis of industrial images using low cost vision machines.</i> University grants, code: VIE 5402-1375-1601	Costa Rica Institute of Technology

## Work Experience

Lecture professor in the following courses: DC/AC electricity, electric machines, electric control, industrial automatization, sensors and actuators and database design.	7/2004- nowadays Costa Rica Institute of Technology
Responsible for the design, development and implementation of a Vision Machine System to inspect the quality of the products in a production line.	6/2003-2/2004 BAXTER Corp. Costa Rica
Field service engineer in charge of assembling, installing and carrying out acceptance tests of the STS 3000 equipment in different plants like: Unisys Rancho Bernardo C.A, Intel Chandler A.Z, Intel Costa Rica, Unisys Misión Viejo C.A and Unisys Chandler A.Z	2000-2002 UNISYS Corp.
Responsible of predictive maintenance engineering for a chemical plant.	1999-2000 Sur Química de Costa Rica

## Journal Publications (*articles in Spanish*)

Murillo-Soto, Luis Diego. "Diseño e implementación del sistema de diagnóstico de fallos usando redes de petri interpretadas y coloreadas." <i>Revista Tecnología en Marcha</i> 31.1 (2018): 3-21.
Murillo-Soto, Luis D., Cindy Calderón-Arce, and Geovanni Figueroa-Mata. "Detección de faltas en motores eléctricos con base en índices de potencias y redes neuronales." <i>Revista Tecnología en Marcha</i> 31.1 (2018): 81-97.
Murillo-Soto, Luis Diego, Geovanni Figueroa-Mata, and Osvaldo Guerrero-Castro. "Identificación de parámetros de un modelo térmico para un motor trifásico de inducción usando algoritmos genéticos." <i>Revista Tecnología en Marcha</i> 29.5 (2016): 25-41.
Murillo-Soto, Luis Diego. "Automatización de pequeña escala con Open Hardware." <i>Revista Tecnología en Marcha</i> 28.1 (2015): 15-23.
Murillo-Soto, Luis Diego. "Diseño del programa de control para una celda de manufactura flexible didáctica." <i>Revista Tecnología en Marcha</i> 27.3 (2014): 41-52.
Murillo-Soto, Luis Diego. "Política de despacho para evitar bloqueos en celdas de manufactura flexible del tipo multi-reentrante." <i>Revista Tecnología en Marcha</i> 26.4 (2013): 42-51.
Murillo-Soto, Luis Diego. "Simulación de un sistema de manufactura flexible con redes de Petri coloreadas." <i>Revista Tecnología en Marcha</i> 23.1 (2011): 47
Murillo-Soto, Luis Diego. "Redes de Petri: Modelado e implementación de algoritmos para autómatas programables." <i>Revista Tecnología en Marcha</i> 21.4 (2008): 102.
Murillo, Luis Diego, and Rodrigo Bogarín. "Propuesta metodológica para construir sistemas automatizados de inspección visual industriales, con base en productos comerciales." <i>Tecnología en Marcha</i> 19.2 (2006): 17-30.

## Last Publications in Congress

L. D. Murillo-Soto and C. Meza, "Fault detection in solar arrays based on an efficiency threshold," 11th IEEE LATIN AMERICAN SYMPOSIUM ON CIRCUITS AND SYSTEMS (LASCAS), San José, 2020.

L. D. Murillo-Soto and C. Meza, "Diagnose Algorithm and Fault Characterization for Photovoltaic Arrays: A Simulation Study," 13th International conference of the IMACS TC1 Committee (ELECTRIMACS), Salerno, Italy, 2019.

L. D. Murillo-Soto and C. Meza, "A Simple Temperature and Irradiance-Dependent Expression for the Efficiency of Photovoltaic Cells and Modules," 2018 IEEE 38th Central America and Panama Convention (CONCAPAN XXXVIII), San Salvador, 2018, pp. 1-6.

Murillo-Soto, Luis D. Figueroa-Mata, G. and Meza, C. "Identification of the internal resistance in solar modules under dark conditions using differential evolution algorithm", IEEE International Work Conference on Bioinspired Intelligence (IWOBI), Costa Rica, 2018.

Murillo-Soto, Luis D., and Carlos Meza. "Voltage measurement in a reconfigurable solar array with series-parallel topology." Central America and Panama Convention (CONCAPAN XXXVII), 2017 IEEE 37th. IEEE, 2017.

Murillo-Soto, Luis D. "Diseño e implementación del sistema de diagnóstico de fallos para un sistema hidráulico: usando redes de Petri". Congreso Iberoamericano de Ingeniería Mecánica (CIBIM) 13, Lisboa, Portugal, 2017.

## Contact References

Dr. Carlos Meza Benavides , Costa Rica Institute of Technology, [cmeza@tec.ac.cr](mailto:cmeza@tec.ac.cr)

Dr. Cesar Garita, Costa Rica Institute of Technology, [cesar@tec.ac.cr](mailto:cesar@tec.ac.cr)