

# LUIS ANTONIO ORBEGOSO MORENO



Mechatronic Engineer with great interest and knowledge in the area of robotics, control and automation. With the ability to investigate, learn and apply my knowledge in the professional field, always innovating and looking for the best solutions.

## CONTACT

- Email:** lorbegoso@unitru.edu.pe  
**Phone:** +51 973 003 961  
**Address:** Florencia de Mora, La Libertad, Perú  
**GitHub:** LuisAntonio1929  
**LinkedIn:** Luis Orbegoso  
**ID:** 0000-0002-9751-0589

## SKILLS

### Programming

<b>Python</b> (matplotlib, scipy, sympy, pandas, opencv, keras, tensorflow, numpy, django, ...)	★★★★★
<b>C++</b>	★★★★★
<b>HTML</b>	★★★★★
<b>CSS</b>	★★★★★
<b>JavaScript</b>	★★★★★
<b>LaTeX</b>	★★★★★

### Operative Systems

<b>Linux</b> (Ubuntu, Raspbian, ROS)	★★★★★
<b>Windows</b>	★★★★★

### Software & Tools

<b>Office automation</b> (Microsoft Excel, Word, PowerPoint; Google Docs, Sheets, Slides, Forms, ...)	★★★★★
<b>Matlab and Simulink</b>	★★★★★
<b>Fusion 360</b> (CAD, CAM and CAE)	★★★★★
<b>Arduino</b>	★★★★★
<b>GitHub</b>	★★★★★

### Aptitudes

- Punctuality
- Fast learning
- A-1 driver's license
- Work under pressure
- Professional and polite treatment

### Languages

<b>Spanish</b>	★★★★★
<b>English</b>	★★★★★
<b>Portuguese</b>	★★★★★

## CERTIFICATES

- TOEFL iBT 92**  
RENACYT Researcher

## EDUCATION

- Master in Mathematical Engineering**  
04/05/2024 - 20/12/2025  
National University of Trujillo (UNT), Trujillo, Peru
- Microdegree in Artificial Intelligence**  
20/09/2023 - 25/03/2024  
Fusemachines, New York, USA
- Bachelor in Mechatronic Engineering**  
12/04/2018 - 27/01/2023  
National University of Trujillo (UNT), Trujillo, Peru

## ACHIEVEMENTS, HONORS AND RECOGNITIONS

- 🏆 Best Paper Award at 2023 IEEE Colombian Caribbean Conference (C3)
- 🏆 Professional degree thesis in Mechatronic Engineering with honors
- 🏆 Ranked first in the XI graduating class of Mechatronic Engineering
- 🏆 Researcher in training in the ARCAM group 2023
- 🏆 Ranked first in Mechatronics Engineering Undergraduate Admission

## LABOR HISTORY

- IEEE RAS UNT Research Committee Director**  
23/09/2023  
UNT, Trujillo, La Libertad
- Online Tutor of University Subjects**  
19/05/2023 - 01/09/2023  
LatinHire
- University Social Responsibility**  
23/05/2022 - 06/01/2023  
UNT, Trujillo, La Libertad
- Teaching Assistant in Robotics**  
26/09/2022 - 06/01/2023  
UNT, Trujillo, La Libertad
- Teaching Assistant in Power Electronics**  
23/05/2022 - 09/09/2022  
UNT, Trujillo, La Libertad
- Hardware developer**  
15/03/2022 - 30/06/2022  
DELION S.A.C., Trujillo, La Libertad

## COURSES

- Code Foundation for ROS   ROS1   C++   C   C#   Python   Java  
Data Science   Machine Learning   PHP   CSS   HTML   JavaScript  
Introduction to IoT   Introduction to Cybersecurity   NDG Linux  
S7-1200 PLC   Django   IEEE English for Technical Professionals  
Microsoft Excel

# PUBLICATIONS

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Automatic differential kinematics of serial manipulator robots through dual numbers

 **Orbegoso Moreno L.A.** & Valverde Ramírez E.D.

 18/10/2024  Transactions on Energy Systems and Engineering Applications (TESEA)

 TESEA

An Integrated Approach to Robotic Joint Interpolation: Kinematic Modeling and Constraints for Smooth Trajectories

 **Orbegoso Moreno L.A.**, Valverde Ramírez E.D., Ruiz Rodríguez J.L. & Miñano Corro I.D.

 28/06/2024  2024 47th MIPRO ICT and Electronics Convention (MIPRO)

 IEEE Xplore

Direct Calculation of the Jacobian Matrix: Leveraging Dual Numbers in Robot Forward Kinematics

 **Orbegoso Moreno L.A.**, Valverde Ramírez E.D. & Paredes Paulini W.I.

 21/02/2024  2023 IEEE Colombian Caribbean Conference (C3)

 IEEE Xplore

Comparative Study of Iterative Methods for Inverse Kinematics of Redundant Serial Robots with Increasing Degrees of Freedom

 **Orbegoso Moreno L.A.**, Valverde Ramírez E.D., Pasco Sanchez J.M. & Ruiz Rodríguez J.L.

 02/02/2024  2023 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC)

 IEEE Xplore

Potato Leaf Disease Detection: Comparative Study of the Performance of CNN Architectures - VGG19, ResNet50 and DenseNet201

 Ruiz Rodríguez J.L., Ruiz Rodríguez J.M., Pasco Sanchez J.M., **Orbegoso Moreno L.A.**, Miñano Corro I.D. & Valverde Ramírez E.D.

 23/01/2024  2023 9th International Conference on Signal Processing and Intelligent Systems (ICSPIS)

 IEEE Xplore

Approach to Inverse Dynamics Model for a Serial 3 DoF Robot Using Neural Networks

 **Orbegoso Moreno L.A.**, Valverde Ramírez E.D., Ruiz Rodríguez J.L. & Pasco Sanchez J.M.

 12/01/2024  2023 IEEE 5th Eurasia Conference on IOT, Communication and Engineering (ECICE)

 IEEE Xplore

Geolocation and Virtual Reality to Streamline the Management of Hydrographic Basins of the Regional Agriculture Management of La Libertad - Peru

 Miñano Corro I.D., Sanchez Peralta W.C., **Orbegoso Moreno L.A.**, Ruiz Rodríguez J.L., Pasco Sanchez J.M. & Valverde Ramírez E.D.

 08/11/2023  2023 7th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT)

 IEEE Xplore

Poultry Egg Classification System Using Deep Learning

 Pasco Sánchez J.M., **Orbegoso Moreno L.A.**, Ruiz Rodríguez J.L. & Miñano Corro I.D.

 26/06/2023  2023 5th International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA)

 IEEE Xplore

An adaptation of FABRIK algorithm for serial robot's inverse kinematics

 **Orbegoso Moreno, L.A.** & Alva, A.

 30/11/2022  2022 IEEE International Conference on Engineering Veracruz (ICEV)

 IEEE Xplore

Control cinemático para un robot cuadrúpedo usando el Método de Newton-Raphson

 **Orbegoso Moreno, L.A.**, Rodríguez, C. & Valverde, E.

 26/04/2021  Revista elektron Vol. 5, No. 1, pp. 77-82

 EleKtron



REPÚBLICA DEL PERÚ

A NOMBRE DE LA NACIÓN

El Rector de la Universidad Nacional de Trujillo

Por cuanto:

EL CONSEJO UNIVERSITARIO DE ESTA UNIVERSIDAD, en la fecha, ha conferido el  
GRADO ACADÉMICO de :



**BACHILLER EN INGENIERÍA MECATRÓNICA**

a:

**LUIS ANTONIO ORBEGOSO MORENO**

De la **FACULTAD DE INGENIERÍA, ESCUELA PROFESIONAL DE INGENIERIA MECATRONICA**

Por tanto:

Le expido el presente DIPLOMA para que se le reconozca como tal y se le otorgue los gores y privilegios que le confieren las Leyes de la República.

SECRETARIA GENERAL  
MG. YSABEL EMPERATRIZ RISCO LUJAN

RECTOR  
DR. CARLOS ALBERTO VÁSQUEZ BOYER

DECANO  
DR. MIGUEL ARMANDO BENITES GUTIERREZ

Trujillo, 05 de Mayo de 2023



REPUBLIC OF PERU

IN THE NAME OF THE NATION

The Rector of the National University of Trujillo

For how much:

THE UNIVERSITY COUNCIL OF THIS UNIVERSITY, on the date, has conferred the  
ACADEMIC DEGREE of :



BACHELOR IN MECHATRONICS ENGINEERING,

a:

LUIS ANTONIO ORBEGOSO MORENO

From the FACULTY OF ENGINEERING, PROFESSIONAL SCHOOL OF MECHATRONICS ENGINEERING

Therefore:

I issue you this DIPLOMA so that you may be recognized as such and granted the benefits and privileges conferred by the Laws of the Republic.

GENERAL SECRETARY  
MG. YSABEL EMPRESS RISCO LUJAN

RECTOR  
Dr. CARLOS ALBERTO VASQUEZ BOYER

DEAN  
Dr. MIGUEL ARMANDO BENITES GUTIERREZ

TRANSLATED



REPÚBLICA DEL PERÚ

A NOMBRE DE LA NACIÓN

El Rector de la Universidad Nacional de Trujillo

Por cuanto:

EL CONSEJO UNIVERSITARIO DE ESTA UNIVERSIDAD, en la fecha, ha conferido el  
TÍTULO PROFESIONAL de :



**INGENIERO MECATRÓNICO**

a:

**LUIS ANTONIO ORBEGOSO MORENO**

De la FACULTAD DE INGENIERÍA, PROGRAMA DE INGENIERÍA MECATRÓNICA

Por tanto:

Le expido el presente DIPLOMA para que se le reconozca como tal y se le otorgue los gores y privilegios que le confieren las Leyes de la República.

SECRETARIA GENERAL  
Mg. YSABEL EMPERATRIZ RISCO LUJAN

RECTOR  
DR. CARLOS ALBERTO VÁSQUEZ BOYER

Trujillo, 01 de Diciembre de 2023

DECANO  
DR. MIGUEL ARMANDO BENITES GUTIERREZ



Republic of Peru

IN THE NAME OF THE NATION

The Rector of the National University of Trujillo

For how much:

THE UNIVERSITY COUNCIL OF THIS UNIVERSITY, on the date, has conferred the  
PROFESSIONAL TITLE of :



MECHATRONIC ENGINEER

a:

LUIS ANTONIO ORBEGOSO MORENO

From the FACULTY OF ENGINEERING, MECHATRONICS ENGINEERING PROGRAM

Therefore:

I issue you this DIPLOMA so that you may be recognized as such and granted the benefits and privileges conferred by the Laws  
of the Republic.

GENERAL SECRETARY  
MG. YSABEL EMPRESS RISCO LUJAN

RECTOR  
Dr. CARLOS ALBERTO VASQUEZ BOYER

Trujillo, December 01, 2023

DEAN  
Dr. MIGUEL ARMANDO BENITES GUTIERREZ

*“Año del Bicentenario, de la consolidación de nuestra Independencia, y de la conmemoración de las heroicas batallas de Junín y Ayacucho”*

*“Dos siglos de sabiduría, un legado para el futuro”*

## **RECONOCIMIENTO AL MÉRITO**

### **RESOLUCIÓN DIRECTORAL N°00002-2024-EPIMecatrónica-FAC.ING.**

Trujillo, 25 de enero de 2024.

Visto, los documentos de sustentación de **Trabajo de Tesis** del Sr. **LUIS ANTONIO ORBEGOSO MORENO**, Bachiller de la Escuela Profesional de Ingeniería Mecatrónica, de fecha jueves 12.10.2023, donde el Jurado Dictaminador, conformado por los señores: Mg. Paul David Álvarez Herrera (Presidente), Mg. Jairo Javier Rodríguez Ochoa (Secretario) y Mg. Josmell Henry Alva Alcántara (Vocal), informan sobre los resultados de la sustentación de Trabajo de Tesis, titulada **“Adaptación del algoritmo de fabrik para la solución de la cinemática inversa de robots manipuladores seriales redundantes”** para la obtención del Título profesional de Ingeniero Mecatrónico.

#### **CONSIDERANDO:**

Que, el jurado dictaminador, luego de la evaluación pertinente de acuerdo al Reglamento de Grados y Títulos de la especialidad, considera aprobar por **unanimidad**, con el calificativo de **dieciocho (18)**, al Sr. Bachiller **Luis Antonio Orbegoso Moreno**, según consta en el Acta de Evaluación de Sustentación de la tesis;

Que, el Art. 20 del Reglamento de Grados y Títulos de la Escuela Profesional de Ingeniería Mecatrónica, establece que el calificativo de 18 es considerado como **mención honrosa**; y debe ser reconocida por la Dirección de Escuela mediante Resolución, en la ceremonia de entrega de Grados y Títulos.

Estando a lo expuesto, en mérito a las atribuciones conferidas a la Dirección de Escuela y, en virtud de lo dispuesto en el artículo 36 de la Ley Universitaria N°30220, concordante con el artículo 59 del Estatuto reformado.

#### **RESUELVE:**

**Artículo 1: OTORGAR**, reconocimiento al mérito, al Sr. **LUIS ANTONIO ORBEGOSO MORENO**, por haber obtenido la denominación de **mención honrosa** con el calificativo de **dieciocho (18)**, en la sustentación de la tesis Titulado **“Adaptación del algoritmo de fabrik para la solución de la cinemática inversa de robots manipuladores seriales redundantes”** asesorada por el Mg. **Josmel Henry Alva Alcántara**.

**Artículo 2: CONSIDERAR**, dicho reconocimiento en acto público, en la ceremonia de entrega de Grados y Títulos.

#### **REGISTRESE, COMUNIQUESE Y ARCHIVESE.**



**Ms. Ing. JIMMY ROGER SILVERA OTAÑE**  
**Director de Escuela (e)**

c.c. Decanato  
Interesado  
Carpeta  


 JRSO/jag.

**SGDUNT**  
Reg: 002024100  
Exp: 001724100E

*"Year of the Bicentennial, of the consolidation of our Independence, and of the commemoration of the heroic battles of Junín and Ayacucho"*

*"Two centuries of wisdom, a legacy for the future"*

## RECOGNITION OF MERIT

### DIRECTORIAL RESOLUTION Nº00002-2024-EPIMechatronica-FAC.ING.

Trujillo, January 25, 2024.

Having seen the documents supporting the **Thesis Work** of Mr. **LUIS ANTONIO ORBEGOSO MORENO**, Bachelor of the Professional School of Mechatronics Engineering, dated Thursday 10/12/2023, where the Ruling Jury, made up of Messrs.: Mg. Paul David Álvarez Herrera (President), Mg. Jairo Javier Rodríguez Ochoa (Secretary) and Mg. Josmell Henry Alva Alcántara (Vocal), report on the results of the Thesis Work support, entitled "**Adaptation of the fabrik algorithm for the solution of the inverse kinematics of redundant serial manipulator robots**" to obtain the Professional Title of Mechatronic Engineer.

#### CONSIDERING:

That, the ruling jury, after the pertinent evaluation according to the Regulation of Degrees and Titles of the specialty, considers unanimously approving , with the qualification of **eighteen (18)**, Mr. Bachelor **Luis Antonio Orbegoso Moreno**, as stated in the Sustainability Evaluation Record of the thesis;

That, Art. 20 of the Regulation of Degrees and Titles of the Professional School of Mechatronic Engineering, establishes that the qualification of 18 is considered an **honorable mention**; and must be recognized by the School Directorate through Resolution, at the Degree and Title award ceremony.

Being the above, due to the powers conferred on the School Directorate and, by virtue of the provisions of article 36 of the University Law No. 30220, consistent with article 59 of the reformed Statute.

#### RESOLVES:

**Article 1: GRANT** recognition of merit to Mr. **LUIS ANTONIO ORBEGOSO MORENO**, for having obtained the title of **honorable mention** with the qualification of **eighteen (18)**, in support of the thesis titled "**Adaptation of the fabrik algorithm for the solution of kinematics reverse of redundant serial manipulator robots**" advised by **Mg. Josmel Henry Alva Alcántara**.

**Article 2: CONSIDER** said recognition in a public event, in the ceremony for the awarding of Degrees and Titles.

#### REGISTER, COMMUNICATE AND ARCHIVE.



**Ms. Eng. JIMMY ROGER SILVERA OTANE**  
**School Director (e)**

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File  
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ÿRSO/jag.

<b>SGDUNT</b>
Reg: 002024100
Exp: 001724100E



UNIVERSIDAD NACIONAL DE TRUJILLO  
Facultad de Ingeniería  
Escuela Profesional de Ingeniería Mecatrónica

**CONSTANCIA DE ORDEN DE MERITO**

**Nº0025-2023-EPIMecatrónica-FAC.ING./UNT.**

**EL DIRECTOR DE LA ESCUELA PROFESIONAL DE INGENIERIA MECATRONICA,  
DE LA FACULTAD DE INGENIERIA, DE LA UNIVERSIDAD NACIONAL DE  
TRUJILLO, que suscribe;**

**C E R T I F I C A:**

Que, el Sr. **LUIS ANTONIO ORBEGOSO MORENO**, egresado, identificado con Matrícula N°1513600118, de la Escuela Profesional de Ingeniería Mecatrónica - Facultad de Ingeniería, de la Universidad Nacional de Trujillo; ha obtenido el **PRIMER PUESTO** en el Orden de Mérito de su **Promoción** que **Ingresó** en el **Año 2018**, de un total de 49 alumnos; con **promedio ponderado de 17.01818**, obtenido del I al X ciclo de estudios profesionales, que fueron cursados entre los Años Académicos 2018-I al 2022-II. Según consta en el Sistema Universitario Virtual (SUV).

Se expide la presente constancia, a solicitud del interesado para los fines que estime conveniente.

Trujillo, 25 de abril de 2023.

*Mg. Jimmy Roger Silvera Otañé*  
**DIRECTOR**

c.c. archivo

JRSO/jag.

**SGDUNT**  
Reg: 004523100  
Exp: 003923100E



NATIONAL UNIVERSITY OF TRUJILLO  
Faculty of Engineering  
Professional School of Mechatronic Engineering

**PROOF OF ORDER OF MERIT**

**Nº0025-2023-EPI Mecatronica-FAC.ING./UNT.**

THE DIRECTOR OF THE PROFESSIONAL SCHOOL OF MECHATRONIC ENGINEERING,  
OF THE FACULTY OF ENGINEERING, OF THE NATIONAL UNIVERSITY OF  
TRUJILLO, who subscribes;

**CERTIFIES:**

That, Mr. **LUIS ANTONIO ORBEGOSO MORENO**, graduate, identified with Registration No. 1513600118, from the Professional School of Mechatronics Engineering - Faculty of Engineering, from the National University of Trujillo; has obtained the **FIRST PLACE** in the Order of Merit for their **Class** that **Entered** in **2018**, from a total of 49 students; with **weighted average of 17.01818**, obtained from the I to the X cycle of professional studies, which were taken between Academic Years 2018-I to 2022-II. According to the University System Virtual (SUV).

This certificate is issued, at the request of the interested party for the purposes they deem convenient.

Trujillo, April 25, 2023.

**Mg. Jimmy Roger Silvera Otaña**  
DIRECTOR

cc file

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**SGDUNT**  
Reg: 004523100  
Exp: 003923100E

# Orbegoso Moreno, Luis A

Last (Family/Surname) Name, First (Given) Name Middle Name

Email: lorbegoso@unitru.edu.pe



Orbegoso Moreno, Luis A  
Florencia de Mora 20 de junio 1100  
Trujillo, La Libertad 13002  
Peru

Test Date: April 17, 2024  
Appointment #: 5168 4042 4973 9229  
Native Language: Spanish  
Test Center Country: Peru  
Test Center: STN20600A - Centro Peruano Americano El Cultural

Gender: Male  
Date of Birth: July 07, 1999  
Country of Birth: Peru

Institution Code	Department Code
9479	00
0985	99
0782	00
0974	00

## Test Date: April 17, 2024



## MyBest® Scores | Your highest section scores from all valid test dates, as of April 19, 2024.

Sum of Highest Section Scores	Reading (0-30)	Listening (0-30)	Speaking (0-30)	Writing (0-30)
92 out of 120	26 Test Date Apr 17, 2024	23 Test Date Apr 17, 2024	21 Test Date Apr 17, 2024	22 Test Date Apr 17, 2024

## SECURITY IDENTIFICATION

ID Type: PASSPORT

ID No.: xxxxxxxxxxxxxxxxxxxxxxx5392

Issuing Country: Peru

A total score is not reported when one or more sections have not been administered. Expired scores are not included in **MyBest®** calculations.

76-76

**THIS IS A PDF SCORE REPORT, DOWNLOADED AND PRINTED BY THE TEST TAKER.**

# REGISTRO NACIONAL CIENTÍFICO, TECNOLÓGICO Y DE INNOVACIÓN TECNOLÓGICA

## RENACYT

### CONSTANCIA DE REGISTRO

La Dirección de Evaluación y Gestión del Conocimiento del Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica (Concytec) del Perú hace constar que:

**LUIS ANTONIO ORBEGOSO MORENO**

DNI 72371701

Cuenta con registro de investigador(a) según el siguiente detalle:



Código de registro	:	P0320714
Nivel	:	VII
Fecha de emisión	:	11/04/2024
Condición Activo	:	<a href="#">Verificar clic Aquí</a>

1. La calificación y clasificación del investigador se efectuó en el marco de las disposiciones contenidas en el Reglamento de Calificación, Clasificación y Registro de los Investigadores del Sistema Nacional de Ciencia, Tecnología e Innovación Tecnológica-SINACYT aprobado mediante Resolución de Presidencia N°090-2021-CONCYTEC-P y por el informe de la Dirección de Políticas Públicas N° 3811-2024-CONCYTEC-DPP-SDCTT/AJLLG

2. La presente constancia y la firma que consigna han sido emitidas a través de medios digitales, el amparo de lo dispuesto en el artículo 141-A del Código Civil, y demás normas específicas. Puede verificar la autenticidad de este documento digital y descargarlo desde el enlace:

<http://renacyt.concytec.gob.pe/constancias.zul?cod=P0320714>



## NATIONAL SCIENTIFIC, TECHNOLOGICAL AND DEVELOPMENT REGISTRY TECHNOLOGICAL INNOVATION

RENACYT

### REGISTRATION PROOF

The Directorate of Evaluation and Knowledge Management of the National Council of Science, Technology and Technological Innovation (Concytec) of Peru states that:

**LUIS ANTONIO ORBEGOSO MORENO**

DNI 72371701

It has a researcher registration according to the following detail:



Registration code	:	P0320714
Level	:	VII
Date of issue	:	04/11/2024
Active Condition	:	<a href="#">Verify click here</a>

1. The qualification and classification of the researcher was carried out within the framework of the provisions contained in the Regulations for Qualification, Classification and Registration of Researchers of the National System of Science, Technology and Technological Innovation-SINACYT approved by Presidential Resolution No. 090- 2021- CONCYTEC-P and by the report of the Public Policy Directorate No. 3811-2024-CONCYTEC-DPP-SDCTT/AJLLG

2. This certificate and the signature it contains have been issued through digital means, under the protection of the provisions of article 141-A of the Civil Code, and other specific regulations. You can verify the authenticity of this digital document and download it from the link:

<http://renacyt.concytec.gob.pe/constancias.zul?cod=P0320714>

# CERTIFICATE OF RECOGNITION



IEEE  
Colombian  
Caribbean  
Conference

## BEST PAPER AWARD

presented to

**Luis Antonio Orbegoso Moreno, Edgar David Valverde Ramírez  
and Wellington Isaac Paredes Paulini**

Paper Title: **Direct calculation of the jacobian matrix: Leveraging Dual Numbers  
in Robot Forward Kinematics**

In the **1<sup>st</sup> IEEE Colombian Caribbean Conference - C3**,  
Barranquilla, Colombia, November 23-25, 2023.

## Track: ROBOTICS AND AUTOMATION SYSTEMS

Your dedication and expertise enriched our conference, promoting scholarly achievement.

Paul Sanmartin  
IEEE Colombian Caribbean Section Chair

César Viloria Núñez  
IEEE C3 General Chair

Ingrid Oliveros Pantoja  
IEEE C3 Technical Chair



Fusemachines  
AI Fellowship 2023

This is to certify that

**Luis Antonio Orbegoso Moreno**

has successfully completed the program

**Microdegree™ in Artificial Intelligence**

Apr 5, 2024

Sameer Maskey  
CEO and Founder, Fusemachines Inc.



Powered by **fuse | machines**



# UNIVERSIDAD NACIONAL DE TRUJILLO

## FACULTAD DE INGENIERIA

### ESCUELA PROFESIONAL DE INGENIERIA MECATRONICA



EL DIRECTOR DE LA ESCUELA PROFESIONAL DE INGENIERIA MECATRÓNICA, DE LA FACULTAD DE INGENIERIA, UNIVERSIDAD NACIONAL DE TRUJILLO; que suscribe:

## Certifica:

Que, don: **LUIS ANTONIO ORBEGOSO MORENO**

Alumno de la Escuela Profesional de Ingeniería Mecatrónica, ha participado como **AYUDANTE DE CATEDRA**, en la asignatura **ELECTRONICA DE POTENCIA**, del Departamento Académico de Ingeniería Mecatrónica, realizado en el año académico 2022-I semestre (23.05.2022 al 09.09.2022), con una duración de 180 horas.

Se expide el presente a solicitud de la parte interesada para los fines que estime conveniente.

Trujillo, 06 de enero de 2023.



Mg. Jimmy Roger Silvera Otaña  
DIRECTOR  
Escuela Profesional de Ing. Mecatrónica



TRANSLATED



NATIONAL UNIVERSITY OF TRUJILLO

FACULTY OF ENGINEERING



PROFESSIONAL SCHOOL OF MECHANICAL ENGINEERING

THE DIRECTOR OF THE PROFESSIONAL SCHOOL OF MECHATRONIC ENGINEERING, OF THE FACULTY OF  
ENGINEERING, NATIONAL UNIVERSITY OF TRUJILLO; who subscribes:

## Certifies:

Que, don: Luis ANTONIO ORBEGOSO MORENO

Student of the Professional School of Mechatronics Engineering,  
he has participated as a TEACHING ASSISTANT, in the ELECTRONIC subject OF  
POWER, from the Academic Department of Mechatronic Engineering, conducted in the year  
academic 2022-I semester (23.05.2022 to 09.09.2022), with a duration of 180 hours.

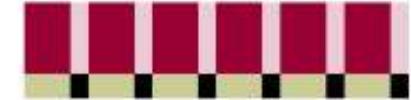
as you see fit.

The present is issued at the request of the interested party for the purposes

Trujillo, January 06, 2023.



Mg. Jimmy Roger Silvera Otañé  
DIRECTOR:  
Professional School of Ing. Mechatronics





# UNIVERSIDAD NACIONAL DE TRUJILLO

## FACULTAD DE INGENIERIA

### ESCUELA PROFESIONAL DE INGENIERIA MECATRONICA



EL DIRECTOR DE LA ESCUELA PROFESIONAL DE INGENIERIA MECATRÓNICA, DE LA FACULTAD DE INGENIERIA, UNIVERSIDAD NACIONAL DE TRUJILLO; que suscribe:

## Certifica:

Que, don: **LUIS ANTONIO ORBEGOSO MORENO**

Alumno de la Escuela Profesional de Ingeniería Mecatrónica, ha participado como **AYUDANTE DE CATEDRA**, en la asignatura **ROBOTICA**, del Departamento Académico de Ingeniería Mecatrónica, realizado en el año académico 2022-II semestre (26.09.2022 al 06.01.2023), con una duración de 180 horas.

Se expide el presente a solicitud de la parte interesada para los fines que estime conveniente.

Trujillo, 06 de enero de 2023.



Mg. Jimmy Roger Silvera Otaña  
DIRECTOR  
Escuela Profesional de Ing. Mecatrónica





TRANSLATED

NATIONAL UNIVERSITY OF TRUJILLO

FACULTY OF ENGINEERING

PROFESSIONAL SCHOOL OF MECHANICAL ENGINEERING



THE DIRECTOR OF THE PROFESSIONAL SCHOOL OF MECHATRONIC ENGINEERING, OF THE FACULTY OF ENGINEERING, NATIONAL UNIVERSITY OF TRUJILLO; who subscribes:

## Certifies:

Que, don: Luis ANTONIO ORBEGOSO MORENO

Student of the Professional School of Mechatronics Engineering, he has participated as a TEACHING ASSISTANT, in the ROBOTICS subject, of the Academic Department of Mechatronic Engineering, conducted in the academic year 2022-II semester (26.09.2022 to 06.01.2023), with a duration of 180 hours.

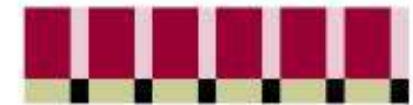
as you see fit.

The present is issued at the request of the interested party for the purposes

Trujillo, January 06, 2023.



Mg. Jimmy Roger Silvera Otañé  
DIRECTOR:  
Professional School of Ing. Mechatronics





# UNIVERSIDAD NACIONAL DE TRUJILLO

## FACULTAD DE INGENIERIA

### ESCUELA PROFESIONAL DE INGENIERIA MECATRONICA



EL DIRECTOR DE LA ESCUELA PROFESIONAL DE INGENIERIA MECATRÓNICA, DE LA FACULTAD DE INGENIERIA, UNIVERSIDAD NACIONAL DE TRUJILLO; que suscribe:

## Certifica:

*Que, don: LUIS ANTONIO ORBEGOSO MORENO*

*Alumno de la Escuela Profesional de Ingeniería Mecatrónica, ha participado del PROYECTO DE RESPONSABILIDAD SOCIAL UNIVERTARIA (RSU), en el DISEÑO DE UN CARRITO SALVAESCALERAS PARA SILLA DE RUEDAS, del Departamento Académico de Ingeniería Mecatrónica, realizado en el periodo del 23.05.2022 a 06.01.2023, con una duración de 384 horas.*

*Se expide el presente a solicitud de la parte interesada para los fines que estime conveniente.*

*Trujillo, 06 de enero de 2023.*



Mg. Jimmy Roger Silvera Otaña  
DIRECTOR  
Escuela Profesional de Ing. Mecatrónica



# TRANSLATED



## NATIONAL UNIVERSITY OF TRUJILLO

### FACULTY OF ENGINEERING



### PROFESSIONAL SCHOOL OF MECHANICAL ENGINEERING

THE DIRECTOR OF THE PROFESSIONAL SCHOOL OF MECHATRONIC ENGINEERING, OF THE FACULTY OF ENGINEERING, NATIONAL UNIVERSITY OF TRUJILLO; who subscribes:

## Certifies:

Que, don: Luis ANTONIO ORBEGOSO MORENO

Student of the Professional School of Mechatronics Engineering, he has participated in the UNIVER-TARY SOCIAL RESPONSIBILITY (MSR) PROJECT, in the DESIGN OF A WHEELCHAIR STAIRLIFT CART, from the Department Academic of Mechatronic Engineering, conducted in the period from 23.05.2022 to 06.01.2023, with a duration of 384 hours.

The present is issued at the request of the interested party for the purposes as you see fit.

Trujillo, January 06, 2023.



Mg. Jimmy Roger Silvera Otaño  
DIRECTOR!  
Professional School of Ing. Mechatronics





October 9th, 2023

## CERTIFICATE

We hereby confirm that Mr. Luis Antonio Orbegoso Moreno, with ID No. 72371701 and of Peruvian nationality, delivered services to LatinHire as an independent contractor.

Mr. Orbegoso worked as a tutor for users from other countries connected remotely via the Internet from 19th May 2023 until September 1st, 2023 in the following subjects: Advanced Physic, Algebra, Electrical Engineering, Mechanical Engineering, Precalculus y, Statistics and Probability..

This certificate is presented at the request of the interested parties for private purposes.



Camila Navia Revollo

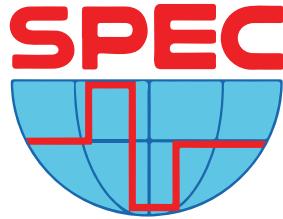
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17<sup>TH</sup> BRAZILIAN POWER ELECTRONICS CONFERENCE  
8<sup>TH</sup> IEEE SOUTHERN POWER ELECTRONICS CONFERENCE

# CERTIFICATE

The organizing Committee of the 17<sup>th</sup> Brazilian Power Electronics Conference and 8<sup>th</sup> IEEE Southern Power Electronics Conference certifies

Luis Antonio Orbegoso Moreno

for the dedication and competence as reviewer of 1 article submitted to  
COBEP/SPEC 2023

A blue ink signature of the name 'Telles Brunelli Lazzarin'.

**Telles Brunelli Lazzarin**

General Chair  
Florianópolis - SC  
29/11/2023

# CERTIFICATE

This is to certificate that

**LUIS ANTONIO ORBEGOSO MORENO**

has participated at "INTERCON 2023" as:

**REVIEWER OF RESEARCH ARTICLES**

Congress organized by the IEEE Student Branch of the UPC. Held in person from November 2 to 4, 2023 at the Universidad de Ciencias Aplicadas (UPC) - Sede Monterrico.



César A. Beltrán Castañon  
IEEE Peru Section Chair



Link for verification with the QR code

IEEE-PE-2023-01220

# IEEE ARGENCON 2020

## CERTIFICATE OF PRESENTATION

This is to certify that

**Luis Antonio A. Orbegoso Moreno**

has presented the #257 paper entitled:

***Control cinemático para un robot cuadrúpedo usando el algoritmo de Newton-Raphson***

authored by

**Orbegoso Moreno, Luis Antonio A. • Valverde Ramirez, Edgar D. • Rodríguez, Cristian A. • Briceno, Daniel D**

at the 2020 IEEE Biennial Congress of Argentina, held during 1-4 December 2020, in virtual mode.



Carlos A. Pérez  
IEEE ARGENCON 2020  
General Chair



Daniela López de Luise  
IEEE ARGENCON 2020  
Technical Program Committee  
Vice Chair



UNIVERSIDAD  
TECNOLÓGICA NACIONAL  
FACULTAD REGIONAL  
RESISTENCIA

# CERTIFICATE OF RECOGNITION



IEEE  
Colombian  
Caribbean  
Conference

## BEST PAPER AWARD

presented to

**Luis Antonio Orbegoso Moreno, Edgar David Valverde Ramírez  
and Wellington Isaac Paredes Paulini**

Paper Title: **Direct calculation of the jacobian matrix: Leveraging Dual Numbers  
in Robot Forward Kinematics**

In the **1<sup>st</sup> IEEE Colombian Caribbean Conference - C3**,  
Barranquilla, Colombia, November 23-25, 2023.

## Track: ROBOTICS AND AUTOMATION SYSTEMS

Your dedication and expertise enriched our conference, promoting scholarly achievement.

Paul Sanmartin  
IEEE Colombian Caribbean Section Chair

César Viloria Núñez  
IEEE C3 General Chair

Ingrid Oliveros Pantoja  
IEEE C3 Technical Chair

# CERTIFICATE OF RECOGNITION



IEEE  
Colombian  
Caribbean  
Conference

THIS IS TO CERTIFY THAT

**Luis Antonio Orbegoso Moreno, Edgar David Valverde Ramirez and Wellington Isaac Paredes Paulini**

have been recognized for their contribution AUTHORS at the **2023 IEEE Colombian Caribbean Conference** with the following paper:

Direct calculation of the jacobian matrix: Leveraging Dual Numbers in Robot Forward Kinematics  
Track: RAS

22<sup>nd</sup> - 25<sup>th</sup> November 2023

Paul Sanmartin  
IEEE Colombian Caribbean Section Chair

César Viloria Núñez  
IEEE C3 General Chair

Ingrid Oliveros Pantoja  
IEEE C3 Technical Chair



# CUADRAGÉSIMA CONVENCIÓN DE CENTRO AMÉRICA Y PANAMÁ

Otorga este certificado a:

**LUIS ANTONIO ORBEGOSO MORENO**

Por su participación en la  
convención celebrada en la ciudad de Panamá,  
República de Panamá, del 9 al 12 de noviembre de 2022.



**DR. CARLOS MEDINA**

Director del Programa Técnico  
Concapan 2022

**ING. ENRIQUE TEJERA**

Presidente del Comité Organizador  
Concapan 2022



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# 2023 IEEE 5th Eurasia Conference on IoT, Communication and Engineering

## CERTIFICATE OF ONLINE ORAL PRESENTATION

This certificate is presented to paper  
with the online oral presentation entitled

**T230166**

**An approach to the inverse dynamics model for a serial 3 DOF robot using  
Neural Network**

**Luis Antonio Orbegoso Moreno; Edgar David Valverde Ramirez; José  
María Pasco Sánchez; José Luis Ruiz Rodríguez**

Yunlin, Taiwan, October 27–29, 2023

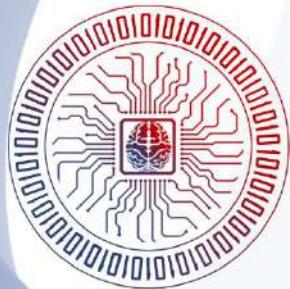
*Teen-Hang Meen*

Distinguished Prof. Teen-Hang Meen, Ph. D.  
The Chairman of IEEE Tainan Section Sensors Council  
The President of International Institute of  
Knowledge Innovation and Invention

*Chi-Ting Ho*

Prof. Chi-Ting Ho, Ph. D.  
IEEE ECICE 2023 Program Chairman  
Dean, College of Engineering,  
National Formosa University, Taiwan

International Institute of Knowledge Innovation and Invention



# HORA 2023

[www.horacongress.com](http://www.horacongress.com)

5<sup>th</sup> International Congress on  
Human-Computer Interaction,  
Optimization and Robotic Applications

June 8-10, 2023, İstanbul, Turkey

## *Certificate of Participation*

This is to certify that

**Luis Antonio Orbegoso Moreno**

has participated in the 5<sup>th</sup> International Congress on Human-Computer Interaction, Optimization and Robotic Applications by giving an oral presentation.

---

Paper ID / Title : 64 / Poultry EGG Classification System Using Deep Learning

---

Paper Author(s) : José María Pasco Sánchez, Luis Antonio Orbegoso Moreno, José Luis Ruiz Rodríguez, Isac Daniel Miñano Corro

Ebubekir Yasar  
Publication Chair

Turgut Özseven  
Congress Chair



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# IEEE ICEV 2022 ®

The Organizing Committee acknowledges to

**Luis Antonio Orbegoso Moreno, Josmell Henry Alva Alcántara**



For the presentation of the contribution titled

**"An adaptation of FABRIK algorithm for serial robot's inverse kinematics"**

at the

**2022 IEEE International Conference on Engineering Veracruz**

**(IEEE ICEV 2022) ®**

Boca del Río, Veracruz, October 24th - 28th, 2022



Dr. Rubén Edel Navarro  
Vicerrector Región Veracruz  
Universidad Veracruzana



**Veracruz Section**





9th International Conference on Signal  
Processing and Intelligent Systems  
ICSPIS 2023

Organized by :



Published & Indexed by :



# CERTIFICATE

This certificate is proudly presented to

**Luis Antonio Orbegoso Moreno**

as

**Co-author**

For The Paper Entitled

Potato Leaf Disease Detection: Comparative Study of the Performance of  
CNN Architectures - VGG19, ResNet50 and DenseNet201

In The 9<sup>th</sup> International Conference on Signal Processing and Intelligent System (ICSPIS),  
which held in Prime Plaza Hotel, Sanur, Bali, Indonesia, on December 14-15<sup>th</sup>, 2023.

Prof. Hamid Hassanpour, Ph.D  
ICSPIS Conference Chair



# 7<sup>th</sup> International Symposium on Multidisciplinary Studies and Innovative Technologies

October 26-28, 2023, Ankara, Turkiye

## Certificate of Participation

This is to certify that

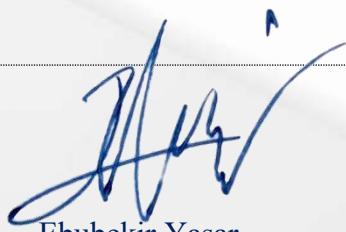
**Luis Antonio Orbegoso Moreno**

has participated in the 7<sup>th</sup> International Symposium on Multidisciplinary Studies and Innovative Technologies

Paper ID / Title : 39 / Geolocation and Virtual Reality to Streamline The Management of Hydrographic Basins of The Regional Agriculture Management of La Libertad - Peru

Paper Authors : Isac Daniel Miñano Corro , Waldir Carlos Sanchez Peralta, Luis Antonio Orbegoso Moreno, Jose Luis Ruiz Rodriguez, Jose María Pasco Sanchez, Edgar David Valverde Ramirez

Presentation Type : Oral



Ebubekir Yaşar  
Symposium Chair



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[ismsitconf@ismsitconf.org](mailto:ismsitconf@ismsitconf.org) 



THE ORGANIZING COMMITTEE OF THE 2023 IEEE  
INTERNATIONAL AUTUMN MEETING ON POWER,  
ELECTRONICS AND COMPUTING

# ROPEC 2023

GRANTS THIS  
**CERTIFICATE**

TO

*Luis Antonio Orbegoso Moreno, Edgar David Valverde Ramírez,  
José María Pasco Sánchez and José Luis Ruiz Rodríguez*

for the presentation of the paper

**Comparative Study of Iterative Methods for Inverse Kinematics  
of Redundant Serial Robots with Increasing Degrees of Freedom**

Dr. Juan Carlos Olivares Rojas  
GENERAL CHAIR  
ROPEC 2023

Dr. Fernando Ornelas Tellez  
CHAIR  
IEEE CENTRO OCCIDENTE SECTION

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC

IXTAPA, ZIHUATANEJO, GRO. MÉXICO; OCTOBER 18-20, 2023

# Verified Certificate

DelftX

This is to certify that

**Antonio Orbegoso**

successfully completed and received a passing grade in

**ROS1x: Hello (Real) World with ROS – Robot Operating System**

a course of study offered by DelftX, an online learning initiative of Delft University of Technology.



Mukunda Bharatheesha

Post-Doctoral Researcher  
Department of Cognitive Robotics  
*Delft University of Technology*



Verified Certificate  
Issued junio 29, 2022

Valid Certificate ID  
**8beab1a090e345059ef1026d4f67bd7e**