



DR. JUVENAL RODRÍGUEZ RESÉNDIZ.

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**ACADEMIC
STUDIES**

2011 Engineering Doctor. UAQ (Servo systems).
2008 Science Master (Instruments and Automated Control).
2006 Bachelor: UAQ, Automation Engineering (Industrial Electronics).

AFFILIATIONS

NATIONAL RESEARCH SYSTEM, LEVEL 1
IEEE SENIOR MEMBER,
Embedded Systems Cluster Member

**SPECIALIZATIO
N
FIELDS**

Servo systems, digital signal processing and image processing.

CURRENT JOB

Querétaro State University (UAQ), Querétaro, México - Engineering Department
– Automation Undergraduate Program Coordinator – Full time professor

**RESEARCH
STAYS**

June 2012. West Virginia University, Morgantown, West Virginia, United States.

**RECENT
PUBLICATIONS**

- A. Gómez-Espinosa, P.D. Lafuente-Ramón, C. Rebollar-Huerta, M.A. Hernández-Maldonado, E.H. Olguín-Callejas, H. Jiménez-Hernández, E.A. Rivas-Araiza, J. Rodríguez-Reséndiz, Design and Construction of a Didactic 3-DOF Parallel Links Robot Station with a 1-DOF Gripper, *J. App. Res. Tech.*, no. 11, vol. 2, 2014.
- A. Gómez-Espinosa, V. M. Hernández-Guzmán, Manuel Bandala-Sánchez, H. Jiménez-Hernández, E. A. Rivas-Araiza, J. Rodríguez-Reséndiz, G. Herrera-Ruiz, A New Adaptive Self-Tuning Fourier Coefficients Algorithm for Periodic Torque Ripple Minimization in Permanent Magnet Synchronous Motors(PMSM), *Sensors*, no. 13, vol. 3Mar. **2013**, pp. 3831-3847, ISSN 1424-8220.
- J. M. Gutierrez-Villalobos, J. Rodríguez-Resendiz, E. A. Rivas Araiza and V. H. Mucino, A Review of Parameter Estimators and Controllers for Induction Motors Based on Artificial Neuronal Networks, *Neurocomputing*, 2013, ISSN 0925-2312.
- J. Rodríguez-Reséndiz, E. A. Rivas-Araiza, G. Herrera-Ruiz, "Adjustable Speed Drive Project for Teaching a Servo Systems Course Laboratory", *IEEE Trans. on Edu.*, vol. 54, no. 4. Nov., **2011**, pp. 657-666.
- J. Rodríguez-Reséndiz, C. A. González-Gutierrez, G. Mota-Valtierra, E. A. Rivaz-Araiza, J. D. Mendiola-Santibañez, R. Luna-Rubio, A PC-based architecture for parameter Analysis of Vector-Controlled Induction Motor Drive, *Comp. Elec. Eng.* vol. 37, no. 6, Nov., **2011**, pp. 858-868.
- J. Rodríguez-Reséndiz, F. Mendoza-Mondragón, R. A. Gómez-Loenzo, M. A. Martínez-Hernandez, An approach to motion control applications based on advanced programmable devices, *Int. J. Elec. Eng. Edu.*, vol.

49, Abr. **2012**.

- J. Rodríguez-Reséndiz, J. M. Gutierrez-Villalobos, D. Duarte-Correa, J. D. Mendiola-Santibañez, I. M. Santillan-Marcos, "Design and Implementation of an Adjustable Speed Drive for Motion Control Applications", *J. Appl. Res. Technol.*, vol. 10, no. 2, Abr., **2012**. 180-194.
- J. D. Mendiola-Santibañez, I. R. Terol-Villalobos, A. R. Jiménez-Sánchez, M. Gallegos-Duarte, J. Rodríguez-Reséndiz and Israel Santillan, "Application of morphological connected openings and levelings on magnetic resonance images of the brain", *Int. J. Imag. Syst. Tech.*, vol. 21, no. 4, Dec. **2011**, pp. 336-348.
- A. R. Jiménez-Sánchez, I., J. D. Mendiola-Santibañez and J. Rodríguez-Reséndiz, "Morphological Contrast Index based on the Weber's Law", *Int. J. Imag. Syst. Tech.*, **2012**
- J. Rodríguez-Reséndiz, E. A. Rivas-Araiza and G. Herrera-Ruiz, "Virtual Instrumentation for Analysis of an Adjustable Speed Drive Parameters Based on DSC", *Proceedings of Texas Instruments, In European DSP in Education and Research Conference*, vol. 4, no. 1, pp. 195-199, ISBN: 978-0-9552047-4-6., **2010**.
- J. Rodríguez-Reséndiz, E. A. Rivas-Araiza and G. Herrera-Ruiz, "Indirect Field Oriented Control of an Induction Motor Sensing DC-Link Current", *Proceedings of IEEE Computer Society. In Conference of Electronics, Robotics and Automotive Mechanics*, vol. 1, **2008**, pp. 325-331. ISBN 978-0-7695-3320-9/08.
- M. A. Martínez-Hernández, F. Mendoza-Mondragón, J. Rodríguez-Reséndiz, R. Rodríguez-Ponce, J. M. Gutiérrez-Villalobos, "On-line Rotor Resistance Estimation for an Induction Motor Drive Based on DSC", *In European DSP in Education and Research Conference*, vol. 5, no. 1, pp. 195-199, ISBN: 978-0-9552047-4-6., **2012**.
- J. A. Rodríguez-Arcega, J. Rodríguez-Reséndiz, A. A. Acosta-Osorio, M. A. Martínez Hernández, F. Mendoza-Mondragón, "Implementation and Design of a Servo Amplifier based on High-Performance Microcontroller", *7th. Congress of Engineering*, **2012**.
- M. A. Martínez-Hernandez, J. Rodríguez-Reséndiz, F. Mendoza-Mondragón, "On-Line Identification of Parameters by means of Neuronal Networks on Induction Motors", *International Congress of Engineering*, **2011**.
- M. Sauza-Toledo, J. Rodríguez-Reséndiz, "Analysis of the Power Consumption on a three-phase Induction motor by means of the FFT, a review", *International Congress of Engineering*, 2011.
- J. Rodríguez-Reséndiz, E. Rivas-Araiza, "Automation of a Assembly Seats for Automotive Industry", *International Congress of Engineering*, **2006**.
- P. YeseniaBalencia-Lázaro, J. Rodríguez-Reséndiz, "Auditory Steady State of Response: a review", *International Congress of Engineering*, **2012**.
- R. A. Hernández-Del-Casillo, J. Rodríguez-Reséndiz, "Development of a system for controlling a multiaxis system for CD motors with didactical approach", *International Congress of Engineering*, **2012**.
- M. J. Molano C. and J. Rodríguez-Reséndiz, "Design and implementation of signal conditioning system based linear optocoupler for power quality analyzer", *IX International Congress of Engineering*, **2013**.
- R. Rodríguez-Ponce and J. Rodríguez-Reséndiz, "Strategy to ease the implementation on fpga of a magnetic flux estimator for PMSM controllers based on dtc", *IX International Congress of Engineering*, **2013**.

**PROFESSIONAL
EXPERIENCE.**

- J. A. Romero-González, J. Rodríguez-Reséndiz, Analysis and development of a communication platform between control devices for a 6-axis industrial robot of freedom. International Congress of Engineering, 2013.
- M. A. Martínez-Hernández, J. Rodríguez-Reséndiz, Neuronal algorithm based on current model of a three phase induction motor for parameter identification, International Congress of Engineering, 2013.

2012	<p>Professor, UAQ, Subject: Advanced Programming, Undergraduate.</p> <p>Professor, UAQ, Subject: Digital Systems III, Undergraduate.</p> <p>Professor, UAQ, Subject: Advanced Electronics, Graduate.</p> <p>Professor, UAQ, Subject: Project Integration and Seminary of Research, Undergraduate.</p> <p>Chairman of Automation Undergraduate Program. I manage the entire Automation career, which has been the best program for studying electronic engineering in México.</p> <p>Professor, Mechanical and Aeroespacial Engineering, West Virginia University. I designed a plan to accredit the Automation career at UAQ in collaboration with the WVU by means of the American Board of Engineering and Technology.</p>
2011	<p>Professor, UAQ, Subject: Methodology of Research, Masters.</p> <p>Head of the Minirobotics Competence in Querétaro State, IEEE-UAQ. I conducted the competences supported by IEEE in Qro. 5 times. This event increases the interest of mechatronics in the local area.</p> <p>Mechatronic Laboratory Head UAQ-FI. I was the attendant of this department where I conducted many research projects and thesis related with mechatronics, also I created part of the infrastructure of this build thanks to the industrial projects.</p>
2010	<p>Professor, UTTT, Tula, Hidalgo, México, Subject: Advanced Computing. I imparted courses of M. S. Degree. Also certain research projects have been developed with students from UAQ and UTTT.</p>
2009-2012	<p>LabVIEW, International Congress of Engineering, UAQ-FI. I have imparted continuously express LabVIEW courses.</p>
2006-2012	<p>Professor, UAQ, Subject: Servo systems, Undergraduate.</p> <p>Professor, UAQ, Subject: Advanced Programming, Undergraduate.</p>
2004-2011	<p>IEEE President of the Engineering Department - Student Branch at UAQ. I attended the issues related with the branch. I joined more than 20 members to IEEE.</p>
2006-2007	<p>Mechatronic Laboratory Researcher UAQ.</p>
2004-2006	<p>Design of projects, Conveyors and Automation System, S.A de C.V. Tel. 2187230. I was the Director of Control Design Department, where I developed many industrial projects including food and automotive industry.</p>
2003-2005	<p>Engineering Developer, TAASA S.A. de C.V. Tels. /Fax: 213 8836 y 223 5920. I was technician in this industry. I give support to many industries by means of TAASA such as: Levis & Dockers, Bachoco,</p>

ADWARDS AND RECOGNITION

- Mexilac, Estafeta, just to mention a few.
- 2002-2003 Technician, Rexam Beverage Can Americas, S. A. de C. V. Tel.22963300. I worked in final quality area of this industry that makes the can for beverage by means of aluminum.
- 2000-2002 Technician at CBTis 118, Electronics Laboratory. I collaborated in this lab. by fixing the broken down equipment, doing corrective maintenance, sorting devices, helping students, and other scholar activities.
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- 2013 Member of the National Research System - **SNI 1, CONACyT. IEEE Senior member**
- 2012 Research Scholarship given by - Mexican Science Association and Mexican-USA Foundation for Science.
- 2011 Best Qualification Student of Doctoral Program.
- 2010 Best paper at EDERC by Texas Instruments, Nice, France.
- 2009 3rd position of the International Minirobotic Competition - Arm manipulator
- 2007, 2011 Laurate of Master's and Doctoral's studies.

BOOKS

2012 AC Drive Construction for Three-Phase Induction Motors, ISBN:978-3-659-02750-5

BOOK CHAPTERS

- M. A. Martínez-Hernández, F. Mendoza-Mondragón, J. Rodríguez-Reséndiz, On-line Rotor Resistance Estimation for an Induction Motor Drive Based on DSC, 7th Engineering Congress, 2011.
- J. A. Rodríguez-Arcega, J. Rodríguez-Reséndiz, A. A. Acosta-Osorio, M. A. Martínez Hernández, F. Mendoza-Mondragón, "Implementation and Design of a Servo Amplifier based on High-Performance Microcontroller", 7th. Congress of Engineering, 2011.

PATENTS

2010 Drive for AC motors, MX/a/2010/008126, MX2010/061483

HEAD OF INDUSTRY PROJECTS

Date	Institution	Boudget\$USD	Title
2014	FOVIN - UAQ	7,000,00	Transformer based on power electronics
2014	FESE	10,000.00	Automated green-house based on SCADA system
2014	CONACyT - Gov. Qro.	60,000.00	Automated Oven for mercury extraction
2013	CONACyT-UAQ-MABE-CIDESI	57,00,00	Smart Algorithms for Stoves
2012	CONACyT-UAQ-MABE-CIDESI	30,000.00	Variable Temperature Chamber for testing wash machine.
2012	CONACyT-UAQ-MABE-CIDESI	30,000.00	Set of electronic boards for programming microcontroller based on graphical language for optimization of power consumption
2012	CONACyT-UAQ-MABE-CIDESI	30,000.00	FPGA based test bench for wash machines, spring behaviour.
2011	FIFI-UAQ	6,000.00	ASD development for robotics
2011	CONACyT-UAQ-Electronic Solutions	60,000.00	Digital Audiometer based on FPGA

REVIEWER OF JOURNALS

THESIS

2010	CONACyT-UAQ-CyCEMEX	400,000.00	Technological improvement of the liquid chocolate, high nutrient value and low carbohydrate, automation process.
2010	FESE-UAQ	10,000.00	DSP-based ASD for three-phase IM
8	FIFI-UAQ	6,000.00	Motion Controller for an industrial robot.
9	AMC-FUMEC-UAQ	4,500.00	

- Computers and Electrical Engineering
- Majlesi Journal of Electrical Engineering
- La Mecatrónica en México

Date	Degree	Name	Title
2014	PH. D.	Natalia de J. Nila Olmedo	ANN for frozen chamber embedded in FPGA.
2013	PH. D.	Alonso A. Jiménez Garibay	Stability analysis for a wind turbine.
2013	PH. D.	Moises Martinez Hdez.	ANN for controlling AC motors
2013	Eng.	Froylán Correa Martínez	Development and implementation of an open electrical and electronic architecture for a 6-degree of freedom robot arm
2013	Eng.	René Salinas and Victor Ontiveros	Motion control system for a viscosimeter
2012	PH.D.	R. Rodríguez Ponce	DTC for PMSM based on FPGA
2012	M.S.	J. Romero González	Standard Protocol for Industrial Machinery, particular case: Motion control.
2012	Eng.	J. A. Rodríguez Arcega	Servo amplifier based on high performance uC for DC motors oriented to a Viscosimeter
2012	Eng.	S. Ortiz Campos	Software interface for a 6 degree of freedom Romat 560 arm
2012	Eng.	H. Martínez Nunez	Wind turbine generator analysis by means of monitor variables based on uC.
2012	Eng.	R. Ramírez	Starter kit for Advanced Programming Subject.
2011	PH.D.	J. M Gutiérrez Villalobos	Online parameter identification based on ANN for Induction Motors
2011	PH.D.	C. A. González-Gutierrez	6 Degree of Freedom robot oriented to educative purposes
2011	M.S.	J. Molano Clemente	Software interface and FPGA based system for measuring parameters on ASDs
2010	M.S.	P. Y. BalenciaLazaro	Auditory State Response for neonatal tests.
2010	M.S.	F. Mendoza Mondragón	Motion Controller based on FPGA
2010	M.S.	M.A. Martínez Hernández	Parameter identification of induction motors based on ANN
2010	Eng.	D. Arana Ruiz	2 axis machinery retrofit
2010	Eng.	R. D. Mendoza Rubio	2 axis retrofit machinery
2009	M.S.	M. Sauza Toledo	FFT as a method to measure distortion on ASDs
2009	M.S.	R. A. Hernández del Castillo	Multi-Axis motion controller for DC motors
2009	M.S.	G. Cruz Mucino	Atmosphere contamination due to the residuals in cemetery industry, particular case of study: Tula-Tepeji.

POSTERS

2011	Analysis of the toxic gases and particle emissions produced by burning fuel, particular case: cement industry of Tula, Hidalgo, México, International Congress of Engineering.
2007	An AC drive for Three-phase IMs.

**ATTENDANCE
TO
WORKSHOPS
AND COURSES**

2012 Requirement accreditation for Engineering Mexican Board.
2012 Curricular design based-on competences
2006-2012 International Congress of Engineering.
2010 DSP C2000 Texas Instruments workshop.
2009 PDA basics with LabVIEW.

**PERSONAL
INFORMATION**

Birth: 29th, September 1984, Querétaro, Querétaro, México