



## Curriculum vitae

Jorge Garza-Ulloa, Ph. D. Lecturer  
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### Profile:

30 years of engineering experience in Industrial and academic work, work closely with industry with as CEO of Computec Inc.

Extensive experience in Detect productivity bottleneck, and develop, design and implement new solutions for manufacturing industry, and Teaching new technologies for optimized resources utilization.

Currently as a Lecturer in the Department of Industrial Manufacturing and System Engineering as CEO of Computec, Inc.

Dr. Garza-Ulloa has focused his research in the development of mathematical models for Electrical and Computer Engineering: Biomedical applications, as his Mathematical Model for the Validation of the Ground Reaction Force Sensor in Human Gait Analysis, the Mathematical model to predict Transition-to-Fatigue during isometric exercise on muscles of the lower extremities, and his mathematical model to be used in the Assessment and evaluation of dynamic behavior of muscles with special reference to subjects with Diabetes Mellitus. Dr. Garza-Ulloa also conducts research in Sensor Validation using Computational Intelligence, to detect common factors that cause low reliability of the acquired data. Such factors include power instability, temperature changes, out-of-range data, internal/ external noises, and also synchronization problems that occur when there is the integration of multiple sensor systems. Dr. Garza-Ulloa has been the recipient of numerous honors and awards including a University of Texas at El Paso Graduate School Research Award, Research Schellenger Foundation, and funds for his research from Stern Foundation. He has founded three international technologies consultant companies and been leader in develop novelty specialized electronic manufacturing equipment to improve production. Dr. Garza-Ulloa plans to continue his research, and teaching in Universities/Research Centers, with the goal on develop new methods/equipment for Industrial manufacturing and Healthcare systems (Bio-medical Engineering)/testing performance.

**Education:**

- 2010-2013 Doctor of Philosophy, University of Texas at El Paso  
Program: Electrical and Computer Engineering. Major: Biomedical  
Dissertation Title: Assessment and evaluation of dynamic behavior of muscles with special reference to subjects with Diabetes Mellitus. [Link](#)  
Advisor: Thompson Sarkodie-Gyan, Ph.D. Associate Professor
- 1979-1980 Master of Science, University of Massachusetts.  
Program: Electrical and Computer Engineering  
Thesis Title: Simulation of Computer Networking.  
Advisor: John A. Stankovic. Ph.D. Associate Professor
- 1973-1977 Electronics & Communication Engineer graduated on ITESM Institute Technological at Monterrey Nuevo Leon. Mexico  
Program: Electrical and Computer Engineering  
Thesis Title: Design and implementation of Control system for manufacturing plant: HYLSA  
Advisor: Hector Yeommas, Ph.D. Associate Professor

**Other Certifications:**

- 2000-2010 Flexsim Simulation Software for manufacturing  
Autodesk Certified: Manufacturing Solutions Division  
Microsoft Certified: Product Specialist, Design Directory Infrastructure, Microsoft Exchange Server, Microsoft Windows Servers.  
National Instruments Alliance Program Certified as Director of F. Y Garza.
- 1979 Advanced Mathematics for Engineers and scientists  
Temple University Philadelphia Pennsylvania

**Employment:**

- 2014- UTEP INDUSTRIAL, MANUFACTURING & SYSTEMS ENGINEERING\_ Lecturer [link](#)  
Courses:

Term	Course	CRN	Course Name
Spring 2016	3373	22847	Engr Probability & Stat Models
Fall 2015	2377	15563	Electro-Mechanical Systems
Spring 2015	3373	23059	Engr Probability & Stat Models
Fall 2014	2377	16638	Electro-Mechanical Systems

EPCC Valle Verde \_ Engineering Instructor

Courses:

Term	Course	CRN	Course Name
Fall 2015	2304	11007	Programming For Engineers
Fall 2014	2304	10877	Programming For Engineers
Summer 2014	2332	30890	Mechanics Of Materials

2010-2012

UTEP Teaching Assistant for the Electrical and Computer Engineering

Courses:

Term	Course	CRN	Course Name
Spring 2012	25295	EE 3321	Electromagnetic Field Theory
Fall 2011	13037	EE 3321	Electromagnetic Field Theory
Fall 2011	17020	EE 3338	Electronics I
Spring 2011	26334	EE 3321	Electromagnetic Field Theory
Fall 2010	17239	EE 3321	Electromagnetic Field Theory

1984-

Company's founder and CEO of:

Computec of El Paso at El Paso Texas USA, and  
Computec / MicroATEC SA de CV Juárez, México ([link](#)).

On all these years on the Computer & Electronic Business has been dedicated for entrepreneurs as consultant for manufacturing companies, research on new Manufacturing/Test/Quality, Design of equipment and implementation methods, teaching new technologies, and design new solutions using custom software and hardware implementations. For manufacturing companies in the area of Chihuahua, Mexico and El Paso Texas, USA. As:

Lear Corporation \_ Automotive Seating & Electrical Systems.

Eaton Corporation\_ Power Management.

Johnson & Johnson Coporation\_ Medical Devices

Aligntech Corp \_ Design, manufacture, marketing of removable aligners

Siemens\_ Electrification, automation and digitalization solutions.

And many more

2000-2002

Professor at Institute Technological of Monterrey Cd. Juarez, Chih. Mexico ITESM. Undergraduate/Graduate Teaching: Digital Systems Processing, Microprocessors and Assembly Language.

1981-1984

Professor at ITCJ Technological of Cd. Juarez, Chih. Mexico ( ITCJ )  
Undergraduate /Graduate Teaching: Microprocessor, Senior Projects, and Networking Computer, Control Systems, Thesis Advisor

1981-1984

Research at Graduate Center of ITCJ  
Major projects: Design the first Mexican MicroComputer T.A.Co (Technology & Automated Computer ) link, Design of the first Spanish synthesizer name RO.VO. ( Robot VOice )

1982-1983

CONACYT Consejo Nacional de Ciencia y Tecnología  
Grants Adviser for Universities and Technological at Mexico .Applied to research, improve equipment and school labs, scholarships recommendation to improve high education on Mexico

1977-1978

Professor at ITCJ Technological of Cd. Juarez, Chih. Mexico  
Teaching: Mathematics I II & III, Logic Circuit I and II, Electronics I & II. Digital Design and Advanced Digital Design, Probability and statistics

1972-1977

Electrical & Computer Engineering from ITESM Institute at Monterrey Nuevo Leon. Mexico  
Teaching Assistantship at labs: Digital systems lab I and II, Electronics Lab & Microprocessors Lab.  
Courses on: Programming Languages, Switching Circuits, Digital Circuits, Electromagnetic fields, Electronics Communications Systems, Radiation and Antennas. Probability and statistics.

#### **Awards:**

2012-2013

UTEP Stern Foundation funds for Dissertation

2011

UTEP Award stipend from Research Schellenger Foundation

2010-2012

Assistant Research in the Department of Electrical and Computer Engineering at University of Texas at El Paso.

#### **Journal Publications:**

2012

Scientific Research.Vol4 No.10B October 2012 / DOI: 10.4236 / eng.2012.410B005, world Congress on Engineering and Technology (CET2012) Paper ID : 71401 Paper Title : "A mathematical model to predict Transition-to-Fatigue during isometric exercise on muscles of the lower extremities", by Jorge Garza-Ulloa, Huiying Yu, Thompson Sarkodie-Gyan([Link](#)).

Journal Measurement Elsevier Published January 2012.Reference: MEASUR1771 / DOI information: 10.1016 / j.measurement.2011.12.015. Paper name: "A Mathematical Model for the Validation of the Ground Reaction Force Sensor in Human Gait Analysis", by Jorge Garza-Ulloa, Huiying Yu, Thompson Sarkodie-Gyan ([Link](#)).

## Conference paper:

2012

ASEE Annual Conference AC 2012-4520: "Development Of a Design Theory And Methodology Model For Mechatronics", Dr. Noé Vargas Hernandez, Jose Gabriel Davila, Jorge Garza-Ulloa, Pablo Rangel, Julio Adrian Torres ([Link](#)).

## Other papers:

International Test and Evaluation ( ITEA) The T&E of Systems-Of-Systems Conference Jan 2012.White Sands Missile Range "Sensor Validation using Linear Regression for Noise Error Detection between prediction data behavior and acquired data applied for Human Gait Analysis." ([link](#))

Artificial intelligence analysis using Neural Network to predict three stroke parameters: Surgery needed, Treatment, and Length of Stay for Rehabilitation ([Link](#)).

## Research Conferences:

2012

ASEE Annual Conference AC 2012-4520: "Development Of a Design Theory And Methodology Model For Mechatronics", Dr. Noe Vargas Hernandez, Jose Gabriel Davila, Jorge Garza-Ulloa .

## Business Conferences

Autodesk Vault \_ by Jorge Garza-Ulloa . Spanish Autodesk Communities.  
AutoCAD Electrical Seminar by Jorge Garza-Ulloa .Spanish Autodesk Communities.

## Paper presentation:

2011

UTEP Graduate School "Doctoral Research Exposition" Nov 11,2011 "A Mathematical Model for the Validation of the Ground Reaction Force Sensor in Human Gait Analysis"

## Competitions:

2012

Camino Real Venture Competition\_ March 9/10 2012 Team Student Leader of project:" 3d Smart Goniometer" entrepreneurs to develop a business concept from planning stage, to start up and hopefully to product commercialization of project/products ([Link](#))

2012

IEEE President's Change the World Competition\_ with project "Electronic Sensor/Data Validation a must to resolve to take right decisions!"

**Professional Affiliations:**

- 2012/2011 UTEP Industrial Relation and Co-founder of Society of Robotics and Bio-Cybernetics .
- 2012/2013 UTEP / IEEE Robotics and Automation Society .
- 2010/2013 Vice-president and Co-founder of Neuroscience Research Association at UTEP
- 2010- IEEE Member (Institute of Electrical and Electronics Engineers).
- 2012/2013 ResearchGate member ([Link](#))

Patent request submitted to UTEP/CREIE:

- 2013 “Two non-invasive Methods for Monitoring & Preventing Diabetes type 2 and Pre-diabetes”  
These two new methods are proposed to measure the diabetes implications in the muscles of lower body: Muscle energy expenditure analysis based on the detection of muscle transition-to-fatigue, and Natural Fuzzy logic method for differential analysis in muscle/joint. Then the results are compared with the traditional method based on Semmes-Weinstein monofilament test.

Research and education Website: [http://ima.utep.edu/GarzaUlloa\\_page.html](http://ima.utep.edu/GarzaUlloa_page.html)

Commercial Website: <http://www.computecworld.com>

Thank you for your time and consideration

Please let know if you need any additional information

Dr. Jorge Garza Ulloa