

# Jhon Jairo Quiñones Cortés

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## EDUCATION

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**Universidad de los Andes**  
M.Sc., Mechanical Engineering

Bogotá, Colombia  
**Jan 2015 – Oct 2017**

**Universidad Industrial de Santander**  
B.Eng., Mechanical Engineering

Bucaramanga, Colombia  
**Jul 2006 – Mar 2012**

## PROFESSIONAL EXPERIENCE

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**Innovation Projects Engineer, Gerdau S.A., Colombia – Dominican Republic** **Oct 2017 – Dec 2018**

- Coordinated CAPEX, Improvement, Innovation and Digital transformation projects with external and internal actors such as universities, government, industrial suppliers, society, and entrepreneurs in Colombia and Dominican Republic factories
- Analyzed trends that impact the Gerdau business model or contribute to the evolution of the current model
- Developed a culture of innovation and entrepreneurship aligned to Gerdau's culture transformation
- Implemented and developed the Joint Venture innovation and digital transformation strategy
- Developed proposals for funding based on the identified innovation strategy and worked with partners to access financial and technical support
- Managed agile and six sigma projects

**Quality Assurance Engineer, Gerdau S.A., Bogotá, Colombia** **Jun 2014 – Sep 2017**

- Managed daily quality routine of checking production schedule, auditing product quality and approve test results
- Coordinated quality process of a hot rolling mill (Rebar), 4 cold rolling mills (Wire Rod, Welded Wire Mesh) and 13 Rebar Fabrication Shops including claim and loss analysis and reporting, calibration of equipment, quality tests confirmation and document control
- Supervised quality daily activities of 5 quality technicians
- Executed ISO 9001 and ISO 17025 management systems internal audit
- Analyzed the data from collection samples and identified anomalies and inconsistencies in product quality based on the data with Statistical Process Control and Metrological Assurance
- Design, Installation and commissioning of the mechanical testing and metallography laboratory to conduct metallurgical failure investigations in a steel rolling mill unit
- Supported the development and commissioning of metal-mechanical products and process through experimentation and computational simulation of the processes according to international standards in companies of the steelmaking sector located in Mexico, Chile, Brazil and Venezuela
- Metallurgical failure investigations and root cause analysis

**Production Trainee Engineer, Gerdau S.A., Tocancipa, Colombia** **May 2012 – May 2014**

- Supervised daily maintenance and production activities of 3 maintenance technicians and 40 operators of a reinforcing steel rebar factory
- Cost management
- Planning, scheduling and control of production and maintenance Activities
- Coordinated factory improvement and Lean Manufacturing projects
- Failure Analysis of Machinery Deterioration

- Developed root cause analysis of machinery deterioration and production losses
- Management of Spare Parts and Equipment Services
- Development and Implementation of Project Technical Studies
- TPM and Autonomous Maintenance Facilitator
- Reduced Metallic Losses (Pounds of Scrap Per Ton of Production) in rebar fabrication process in more than 44% percent vs previous year, obtaining measurable gains estimated in 895.000 USD per year
- Coordinated the activities of assembly, installation and commissioning of equipment for increase production capacity of a rebar plant from 2500 ton to 5000 ton
- Reduction in more than 24% in the operating cost by corrective maintenance vs previous year, obtaining measurable gains estimated in 27.000 USD per year

## RESEARCH EXPERIENCE

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- Research Technical Advisor, Gerdau S.A., Bogotá, Colombia** **Jan 2018 – Dec 2019**
- Advise technically as a representative of the company Gerdau S.A. in the multidisciplinary project called Novel iron-iron oxide material obtained from an industrial by-product (IRONOX)
  - Support some technical issues of the researchers belonging to the universities: Escuela Colombiana de Ingeniería, Universidad del Valle and Ecole Polytechnique Fédérale de Lausanne

- Research Technical Advisor, Gerdau S.A., Bogotá, Colombia** **Jan 2018 – Dec 2019**
- Advise technically as a representative of the company Gerdau S.A. in the multidisciplinary project called: Development of new composite materials from the recycling of polymer waste generated in the value chain of the steel and natural fiber Colombian industry, Universidad de los Andes – Gerdau
  - Support some technical issues of the researchers belonging to the Universidad de los Andes

- Research Student, Universidad de los Andes, Bogotá, Colombia** **Jan 2016 - Dec 2016**
- Collaborated with research work within the group of computational mechanics of the mechanical engineering department of the Universidad de los Andes as a master student
  - Advised new members of the computational mechanics research group in simulation techniques for the development of their research projects

## TEACHING EXPERIENCE

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- Adjunct Professor, Fundacion Universitaria CIDCA, Bogotá, Colombia** **Feb 2014 – Jun 2016**
- Taught Mechanics of Materials, Thermodynamics, Fluid Mechanics, Manufacturing and Maintenance classes
  - Planned and executed visits in factories with the students to share practical applications of the theoretical knowledge acquired in classes

- Teaching Assistant, Universidad Industrial de Santander, Bucaramanga, Colombia** **Mar 2011- Mar 2012**
- Supported students in help rooms or review sessions outside of class time for the courses of Thermodynamics, Fluid Mechanics, Hydraulic Turbomachines, Differential Equations and Statics
  - Reinforced lessons presented by teachers by reviewing material with students one-on-one or in small groups

## PUBLICATIONS AND ORAL PRESENTATIONS IN CONGRESSES

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- **Publications**  
**Title:** RANS and Hybrid RANS-LES Simulations of an H-type Darrieus Vertical Axis Water Turbine  
**Journal:** Energies 2018, 11(9), 2348  
**URL:** <https://doi.org/10.3390/en11092348>

**Title:** Computational Study of the Turbulent Flow Dynamics of an H-Type Darrieus Vertical Axis Water Turbine

**Journal:** Publicaciones Uniandes

**URL:** [https://biblioteca.uniandes.edu.co/visor\\_de\\_tesis/web/?SessionID=L1Rlc2lzMjAxNjk5LzExOTI4LnBkZg%3D%3D](https://biblioteca.uniandes.edu.co/visor_de_tesis/web/?SessionID=L1Rlc2lzMjAxNjk5LzExOTI4LnBkZg%3D%3D)

**Title:** Characterization of the Dynamic Response of an Aluminum Alloy 6061 at High Strain Rates Using Kolsky or SHPB Test

**Journal:** Proceedings CIIMCA 2015 2nd International Congress of Mechanical Engineering and Agricultural Science, pp. 32-33, ISSN (Print): 2382- 3305

**URL:** [http://ciimca.upbbga.edu.co/ciimca2015/Documentos/PROCEEDINGS\\_CIIMCA\\_2015.pdf](http://ciimca.upbbga.edu.co/ciimca2015/Documentos/PROCEEDINGS_CIIMCA_2015.pdf)

▪ **Oral Presentations**

**Title:** Computational Study of the Turbulent Flow Dynamics of an H-Type Darrieus Vertical Axis Water Turbine

**Event:** ANSYS Convergence Conference, 2017

**Title:** Characterization of the Dynamic Response of an Aluminum Alloy 6061 at High Strain Rates Using Kolsky or SHPB Test

**Event:** 2nd International Congress of Mechanical Engineering and Agricultural Science, 2015

**Title:** Evaluation of the Erosion Parameter and Mesh Size in a Penetration Test Using ANSYS- AUTODYN

**Event:** ANSYS Convergence Conference, 2015

## COMMUNITY INVOLVEMENT AND OTHER ACTIVITIES

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**Semillero Pacifico, Universidad de los Andes., Bogotá, Colombia**

**Jul 2015 – Nov 2015**

- Exploration of alternatives for a more sustainable, just, equitable and wellness future for Pacific Coast

**Junior Achievement, Gerdau S.A., Tocancipa, Colombia**

**Jun 2012 – Mar 2014**

- Taught children and young entrepreneurs the skills and values necessary for a successful future career

**Rugby Team Member, UIS, Bucaramanga, Colombia**

**Jun 2010 – Jan 2012**

- Trained with the A and B team of the Universidad Industrial de Santander
- Represented the university team in local tournaments

## SKILLS AND CERTIFICATES

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▪ **Computers**

*Advanced:* Solidworks, Inventor, ANSYS-Fluent, ICEM, OS Microsoft, MS Office, Minitab, Matlab

*Intermediate:* OS Linux, ANSYS Mechanical APDL, Open Foam

*Basic:* ANSYS-Autodyn, Python

▪ **Languages**

*Native:* Spanish

*Fluent:* English and Portuguese

▪ **Certificates**

ISO 9001:2015 Internal Auditor

ISO 14001:2015 Internal Auditor

ISO 17025:2017 Internal Auditor

English Intensive Course University of Illinois Urbana-Champaign (Advanced level)

## INTERESTS

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Ride Bike, play soccer, rugby, and reading universal history books