

# Miriam Solis Meza

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## PROFILE

- Graduate student in Mechanical and Manufacturing Engineering with Pipeline Engineering Specialization.
- 2+ years of experience in the construction industry.
- Knowledge of hydraulics, pipeline design, experimental data analysis, computational fluid dynamics (CFD), CAD/CAM systems, geographical information systems (GIS), geotechnical engineering and basics of finite element analysis.
- Full professional proficiency in English and Spanish native speaker.
- Excellent communication skills orally and in writing in English and Spanish.
- Analytical and problem-solving skills developed through research experience.

## SKILLS

- |                                       |                                   |   |
|---------------------------------------|-----------------------------------|---|
| • SolidWorks, SolidCAM                | • Microsoft Office                | • Experience as Teaching Assistant at under and graduate levels |
| • AutoCAD                             | • MATLAB intermediate level       | • Teamwork  |
| • Digital Image Processing            | • ANSYS Fluent intermediate level | • Problem-solving   |
| • ArcGIS                              | • Public Speaking skills          | • Engineering Design  |
| • Java programming intermediate level | • Experimentation                 |   |
| • OpenFOAM                            |                                   |   |

## EDUCATION

**Doctor of Philosophy (Ph. D.),** Mechanical and Manufacturing Engineering **2021-on going**

Schulich School of Engineering

University of Calgary, Alberta, Canada

- Research topic: Drag Reduction Effectiveness in vertical highly viscous pipe flow

**Master of Science (M. Sc.),** Mechanical Engineering **2017-2021**

Schulich School of Engineering

University of Calgary, Alberta, Canada

- Research: "Experimental Study of Highly-Viscous Vertical Pipe Flow using a Non-Intrusive Multi-View Measurement Technique"
- Award: CONACYT-SENER scholarship

### Visiting Student

**Fall 2015**

Pipeline Engineering Specialization

Schulich School of Engineering

University of Calgary, Alberta, Canada

One of the selected cohort of engineers to participate in the partnership between TransCanada, the University of Calgary and the Mexican State of Chihuahua developed to train Mexican engineers with an outstanding academic performance at the Pipeline Engineering Centre at the University of Calgary.

**Bachelor of Engineering,** Civil Engineering **2009–2014**

Universidad Autonoma de Ciudad Juarez, Mexico

- Thesis: Geotechnical Engineering
- Graduated with honors.
- Co-curricular activity: Member of the University Council representing the Department of Civil and Environmental Engineering students.
- Mention as Student of Excellence and as Outstanding Student of Civil Engineering Program.
- Third National place in Hydraulics in the XXIX Olimplaneic Civil Engineering Competition, bachelor level.

## PROFESSIONAL WORK EXPERIENCE

### Graduate Research Assistant

2017– Current

*Pipeline Engineering Centre, University of Calgary, Canada*

Conducting experimental and analytical research about multiphase flow with a focus on non-intrusive flow measurement techniques.

#### Achievements:

- Successfully built two multiphase flow experimental facilities for non-intrusive flow measurements.
- Developed a computer code to analyze gas-liquid two-phase flow through digital image processing.
- Improvement of calculations previously done in the state of the art in optical measurement techniques.
- Validation of techniques typically used in digital image processing providing reliability for further investigations related to optical artifacts on flow measurements.
- Winner of best presentation in the Thermal-Fluids Area in the Graduate Conference of the Department of Mechanical and Manufacturing Engineering at Schulich School of Engineering.

### Graduate Teaching Assistant

2017– Current

*University of Calgary, Canada*

Currently working as a Graduate Teaching Assistant in the Department of Mechanical and Manufacturing Engineering for undergraduate and graduate courses. TA for the following courses:

- Energy and Environment
- Manufacturing and CAD systems
- Fuel Science and Technology
- Heat Transfer
- Engineering Graphics and CAD
- Fundamentals of Pipeline Economics
- Engineering Design and Communication
- Structural Analysis of Buried Steel Pipeline Systems

### Technical Resident

2014-2015

*Terracerias y Pavimentos de Fresnillo S.A de CV, Mexico*

Control of heavy machinery, responsible for scheduling maintenance services, pricing, purchases, and performance reports.

#### Achievements:

- Developed a document organization method to arrange, collect and track machinery performance tickets.
- Established good relationship with vendors.
- Improved communication with field operations.
- Successful backed up for accounting department.

### CO-OP Engineering Internship

2013–2014

*Grupo Cementos de Chihuahua S.A de C.V, Mexico*

Engineering Intern in the Logistic Department of GCC Concrete

#### Achievements:

- Effective planning and scheduling of concrete distributions.
- Fast resolving of schedule conflicts.
- Helped contractors to keep projects under the original planning.

## ADDITIONAL WORK EXPERIENCE

### Laboratory Assistant

2012–2013

*Hydraulics Laboratory at UACJ-IIT, Mexico*

- Development of Fluid Mechanics experiments related to Civil Engineering to test hydrostatics, hydrodynamics, channel design, hydrology and water supply.

*Materials Laboratory at UACJ-IIT, Mexico*

- Soil Mechanics testing such as granulometry of soils, Atterberg limits, PROCTOR tests.

## VOLUNTEERING ACTIVITIES

- Session Aide at the International Pipeline Conference 2018 (IPC 2018).
- 2019 and 2021 Banff Pipeline Workshop Exhibitor for the Pipeline Engineering Centre from the Schulich School of Engineering.
- Young Pipeliners Association of Canada (YPAC) - Organizational Success Committee volunteering in 2021.

## WORKSHOPS

- 2021 Banff Pipeline Workshop: Pipeline Risk Assessment Fundamentals, Pipeline Stress Analysis
- 2019 Banff Pipeline Workshop: Safety Loss Management, System for Design, CSA Z662-19 Update