

# Edgar Covantes Osuna

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[edgarcovantesosuna](https://github.com/edgarcovantesosuna) [k edgarcovantesosuna](https://www.kaggle.com/edgarcovantesosuna) [edgarcovantesosuna](https://www.edgarcovantesosuna.com)

## TECHNICAL SKILLS

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**Programming Languages:** Python, R, C, C++, PHP, Java, Go, SQL.

**Libraries and Tools:** Keras, TensorFlow, Sklearn, SciPy, Pandas, Numpy, Git, Drupal, CakePHP, jQuery.

**Data visualization tools:** Tableau, Matplotlib and PGF/TikZ.

**AI skills:** Strong understanding of ML algorithms, including supervised, unsupervised and deep learning (e.g., DNN, CNN, LSTM), intelligent search agents (e.g., heuristics, metaheuristics, deterministic and randomized search algorithms).

**Cloud computing platforms:** Familiarity with cloud computing platforms (e.g., [Azure](#), [Google Cloud](#)) and containerization technologies (e.g., Docker, Kubernetes).

**Other Technical skills:** Strong understanding of Statistical (including hypothesis testing) and Probability concepts, Complexity Theory, Algorithms, Google Sheets, Microsoft Excel, Relational databases,  $\text{\LaTeX}$ .

## WORK EXPERIENCE

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### Research Professor

*Instituto Tecnológico y de Estudios Superiores de Monterrey, Nuevo León, México*

*July 2019 - Present*

- **Research Area:** Applied Mathematics, Data Science, Machine Learning and Multi-objective Optimization.
- **Lectures:** Advanced Algorithms Analysis and Design, Development of Advanced Applications of Computer Science, Implementation of Computational Models, Design of Intelligent Agents, Analysis of Systems Based on Knowledge.

### Software Engineer Jr

*Continental Automotive (Telematics), Jalisco, México*

*August 2014 - July 2015*

- Design, coding, integration, verification and/or testing for Continental's software products. Technical support to clients, division and production products. Participation in all stages of the development process.

### Software Engineer

*Softtek, Jalisco, México*

*March 2011 - September 2011*

- Developer and/or programmer as a Backup on the .NET framework for Hewlett-Packard (HP).

### Trainee

*TATA Consultancy Services (TCS), Jalisco, México*

*September 2010 - March 2011*

- Trainee in the area of WEB development and programming. Technical support in the project GE Support Central.

### Backend Developer

*DATAWINS, Sinaloa, México*

*April 2010 - September 2011*

- Backend Developer (PHP, Drupal, CakePHP, JQUERY).

## EDUCATION

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### University of Sheffield

**Sheffield, UK**

*Ph.D. in Computer Science*

*2015 - 2018*

### Autonomous University of Sinaloa

**Sinaloa, México**

*Master in Information Sciences*

*2011 - 2013*

### Polytechnic University of Sinaloa

**Sinaloa, México**

*Bachelor of Science in Engineering (Computer Science)*

*2006 - 2009*

## COURSES AND CERTIFICATIONS

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### Google

*Google Data Analytics Professional.*

*April 2024*

### Google Cloud

*Machine Learning Engineer Learning Path. [Google Public Profile](#)*

*February 2024*

### University of Michigan

*Python for Everybody Specialization.*

*July 2021*

### DeepLearning.AI

*DeepLearning.AI TensorFlow Developer Specialization.*

*August 2020*

### Sun Microsystems

*Sun Certified Programmer for the Java 2 platform, standard edition 5.0.*

*July 2009*

## PROJECTS

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- **On the utilization of pair-potential energy functions in multi-objective optimization**, We designed a deep neural network (DNN) that predicts an appropriate value or the parameter  $\alpha$  in the so-called pair-potential functions taking into account the geometry, dimensionality, and cardinality of a Pareto front approximation. [URL](#) [GitHub](#)
- **Improvement of Multiobjective Evolutionary Optimisation Methods to Solve Portfolio Problems for Government Projects in Large Instances**. Member of a team focused on developing tools based on multiobjective evolutionary optimisation methods to solve portfolio and decision-making problems for Government projects.

## PUBLICATIONS

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- Journal and Conference papers: [Google Scholar](#) [Orcid ID](#) [Scopus](#)

## AWARDS

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- **National Researcher Level 1 (Financial Support for researchers)** by the CONAHCYT (the Mexican National Council for Humanity, Science and Technology) - 2013 - Present.
- **Candidate Level (Financial Support for researchers)** by the CONACYT (the Mexican National Council for Science and Technology) - 2020 - 2022.
- **Best paper award nomination in the track 'Genetic Algorithms'** at GECCO '18 - July 2018.
- **Best Graduate Thesis 2014 Award in the Master's category (honourable mention)** by the INAPI (the Institute for Research and Innovation Support) - May 2015.

## EXTRACURRICULAR ACTIVITIES

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- **Demonstrator/Teaching Assistant** at the University of Sheffield - 2015 - 2018.
- **Programme Committee** at the Genetic and Evolutionary Computation Conference (GECCO) - 2016 - 2018.

## LANGUAGES

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- **Spanish:** Native
- **English:** Professional