

# CURRICULUM VITAE

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#### Personal Information

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#### Academic Degrees

- BSc in Civil Engineering, Universidad Autónoma de Chiapas, 1985–1990. Degree awarded in 1991 with the thesis “Analysis of Grid Structures using a personal computer (stiffness method)” (*summa cum laude*).
- Master of Science in Computer Science, Tulane University, New Orleans, Louisiana, EUA, 1991–1993. Degree awarded in December, 1993.
- PhD in Computer Science, Tulane University, New Orleans, Louisiana, EUA, 1993–1996. Degree awarded in May, 1996, with the thesis entitled “An Empirical Study of Evolutionary Techniques for Multiobjective Optimization in Engineering Design”.

#### Most Relevant Publications

##### Monographic Books

1. Carlos A. Coello Coello, David A. Van Veldhuizen and Gary B. Lamont, *Evolutionary Algorithms for Solving Multi-Objective Problems*, Kluwer Academic Publishers, New York, USA, May 2002, ISBN 0-3064-6762-3.
2. Carlos A. Coello Coello, Gary B. Lamont & David A. Van Veldhuizen, “Evolutionary Algorithms for Solving Multi-Objective Problems”, Springer, New York, USA, Second Edition, ISBN 978-0-387-33254-3, September 2007.

##### Edited Books

1. Carlos A. Coello Coello and Gary B. Lamont (eds), *Applications of Multi-Objective Evolutionary Algorithms*, World Scientific, Singapore, 2004, ISBN 981-256-106-4.
2. Carlos Artemio Coello Coello, Satchidananda Dehuri and Susmita Ghosh (editors), *Swarm Intelligence for Multi-objective Problems in Data Mining*, Springer, Berlin/Heidelberg, 2009, ISBN: 978-3-642-03624-8.
3. Carlos A. Coello Coello, Clarisse Dhaenens and Laetitia Jourdan (editors), *Advances in Multi-Objective Nature Inspired Computing*, Springer, Berlin/Heidelberg, 2010, ISBN: 978-3-642-11217-1.

## Edited Proceedings

1. Eckart Zitzler, Kalyanmoy Deb, Lothar Thiele, Carlos A. Coello Coello & David Corne (editors), *Evolutionary Multi-Criterion Optimization. First International Conference, EMO 2001*, Springer-Verlag, Berlin, Lecture Notes in Computer Science, Vol. 1993, March 2001, ISBN 3-540-41745-1.
2. Carlos A. Coello Coello, Arturo Hernández Aguirre and Eckart Zitzler (Editors), *Evolutionary Multi-Criterion Optimization. Third International Conference, EMO 2005*, Springer-Verlag, Berlin, Lecture Notes in Computer Science Vol. 3410, March 2005, ISBN 3-540-24983-4.
3. Carlos A. Coello Coello (Editor), *Learning and Intelligent Optimization, 5th International Conference, LION5*, Springer, Lecture Notes in Computer Science Vol. 6683, January 2011, ISBN 978-3-642-25565-6.
4. Oliver Schütze, Carlos A. Coello Coello, Alexandru-Adrian Tantar, Emilia Tantar, Pascal Bouvry, Pierre Del Moral and Pierrick Legrand (editors), *EVOLVE - A Bridge between Probability, Set Oriented Numerics, and Evolutionary Computation II*, Springer, Advances in Intelligent Systems and Computing Vol. 175, Berlin, Germany, 2012, ISBN 978-3-642-31519-0.
5. Carlos A. Coello Coello, Vincenzo Cutello, Kalyanmoy Deb, Stephanie Forrest, Giuseppe Nicosia and Mario Pavone (Eds.), *Parallel Problem Solving from Nature - PPSN XII, 12th International Conference*, Springer, Lecture Notes in Computer Science Vol. 7491, Taormina, Italy, September 1-5, 2012, ISBN 978-3-642-32936-4.
6. Carlos A. Coello Coello, Julie Greensmith, Natalio Krasnogor, Pietro Liò, Giuseppe Nicosia and Mario Pavone (Eds), *Artificial Immune Systems, 11th International Conference, ICARIS 2012*, Springer, Lecture Notes in Computer Science Vol. 7597, Taormina, Italy, August 28-31, 2012, ISBN 978-3-642-33756-7.
7. Ying Tan, Yuhui Shi and Carlos A. Coello Coello (Eds), *Advances in Swarm Intelligence, 5th International Conference, ICSI 2014*, Springer, Lecture Notes in Computer Science Vols. 8794 and 8795, Hefei, China, October 17-20, 2014.
8. António Gaspar-Cunha, Carlos Henggeler Antunes and Carlos Coello Coello (Eds.), *Evolutionary Multi-Criterion Optimization, 8th International Conference, EMO 2015*, Springer, Lecture Notes in Computer Science Vols. 9018 and 9019, Guimarães, Portugal, March 29–April 1, 2015.

## Book Chapters

1. Ian C. Parmee, Carlos A. Coello Coello and Andrew H. Watson, “Data Representations for Evolutionary Computation”, in H. Cartwright, (Editor), *Intelligent Data Analysis in Science*, Chapter 5, pp. 95–122, Oxford University Press, UK, 2000, ISBN 0-19-850233-8.
2. Carlos A. Coello Coello, “Evolutionary Multi-Objective Optimization: A Critical Review”, in Ruhul Sarker, Masoud Mohammadian and Xin Yao (Editores), *Evolutionary Optimization*, Chapter 5, pp. 117–146, Kluwer Academic Publishers, Boston, USA, February 2002, ISBN 0-7923-7654-4.
3. Ruhul Sarker and Carlos A. Coello Coello, “Assessment Methodologies for Multiobjective Evolutionary Algorithms”, in Ruhul Sarker, Masoud Mohammadian and Xin Yao (Editores), *Evolutionary Optimization*, Chapter 7, pp. 177–195, Kluwer Academic Publishers, Boston, USA, February 2002, ISBN 0-7923-7654-4.
4. Carlos A. Coello Coello and Carlos E. Mariano Romero, “Evolutionary Algorithms and Multiple Objective Optimization”, in Xavier Gandibleux & Matthias Ehrgott (editors), *Multiple Criteria Optimization. State of the Art Annotated Bibliographic Survey*, Chapter 6, pp. 277–331, Kluwer’s International Series in Operations Research and Management Science, Volume 52, Kluwer Academic Publishers, Norwell, Massachusetts, USA, June 2002, ISBN 1-4020-7128-0.
5. Carlos A. Coello Coello, “Evolutionary Multiobjective Optimization: Current and Future Challenges”, in Jose Benitez, Oscar Cordon, Frank Hoffmann and Rajkumar Roy (editors), *Advances in Soft Computing—Engineering, Design and Manufacturing*, Chapter 24, pp. 243–256, Springer-Verlag, Berlin, Germany, September 2003, ISBN 1-85233-755-9.
6. Ricardo Landa Becerra and Carlos A. Coello Coello, “A Cultural Algorithm for Solving the Job-Shop Scheduling Problem”, algorithms in Yaochu Jin (editor) *Knowledge Incorporation in Evolutionary Computation*, Chapter 3, pp. 37–55, Studies in Fuzziness and Soft Computing, Vol. 167, Springer, Berlin, Germany, 2005, ISBN 3-540-22902-7.
7. Dragan Cvetkovic and Carlos A. Coello Coello, “Human Preferences and Their Applications in Evolutionary Multi-Objective Optimization”, in Yaochu Jin (editor) *Knowledge Incorporation in Evolutionary Computation*, Chapter 22, pp. 479–502, Studies in Fuzziness and Soft Computing, Vol. 167, Springer, Berlin, Germany, 2005, ISBN 3-540-22902-7.
8. Carlos A. Coello Coello, Gregorio Toscano Pulido and Efrén Mezura Montes, “Current and Future Research Trends in Evolutionary Multiobjective Optimization”, in Manuel Graña, Richard Duro, Alicia d’Anjou, and Paul P. Wang (editors), *Information Processing with Evolutionary Algorithms: From Industrial Applications to Academic Speculations*, Chapter 15, pp. 213–231, Springer-Verlag, Berlin, Germany, 2005, ISBN 1-8523-3866-0.

9. Carlos A. Coello Coello, “Recent Trends in Evolutionary Multiobjective Optimization”, in Ajith Abraham, Lakhmi Jain and Robert Goldberg (editors), *Evolutionary Multiobjective Optimization: Theoretical Advances And Applications*, Chapter 2, pp. 7–32, Springer-Verlag, London, UK, 2005, ISBN 1-85233-787-7.
10. Efrén Mezura-Montes and Carlos A. Coello Coello, “Use of Multiobjective Optimization Concepts to Handle Constraints in Genetic Algorithms”, in Ajith Abraham, Lakhmi Jain and Robert Goldberg (editors), *Evolutionary Multiobjective Optimization: Theoretical Advances And Applications*, Chapter 10, pp. 229–254, Springer-Verlag, London, UK, 2005, ISBN 1-85233-787-7.
11. Efrén Mezura-Montes, Arturo Hernández Aguirre and Carlos A. Coello Coello, “A Simple Evolution Strategy to Solve Constrained Optimization Problems”, in William Annicchiarico, Jacques Périaux, Miguel Cerrolaza and Gabriel Winter (editors), *Evolutionary Algorithms and Intelligent Tools in Engineering Optimization*, Chapter 1, pp. 1–25, WIT Press, CIMNE Barcelona, España, 2005, ISBN 1-84564-038-1.
12. Carlos A. Coello Coello, “20 Years of Evolutionary Multi-Objective Optimization: What Has Been Done and What Remains to be Done”, in Gary Y. Yen and David B. Fogel (editors), *Computational Intelligence: Principles and Practice*, Chapter 4, pp. 73–88, IEEE Computational Intelligence Society, USA, 2006, ISBN 0-9787135-0-8.
13. Carlos A. Coello Coello, “Evolutionary Multi-Objective Optimization in Finance”, in Jean-Philippe Rennard (editor), *Handbook of Research on Nature Inspired Computing for Economy and Management*, Chapter VI, pp. 74–88, Vol. I, Idea Group Reference, Hershey, USA, 2006, ISBN 1-59140-984-5.
14. Margarita Reyes Sierra and Carlos A. Coello Coello, “A Study of Techniques to Improve the Efficiency of a Multi-Objective Particle Swarm Optimizer”, in Shengxiang Yang, Yew Soon Ong and Yaochu Jin (editors), *Evolutionary Computation in Dynamic and Uncertain Environments*, Chapter 12, pp. 269–296, Springer, Berlin, Germany, 2007, ISBN 978-3-540-49772-1.
15. Leticia Cagnina, Susana C. Esquivel and Carlos A. Coello Coello, “Hybrid Particle Swarm Optimizers in the Single Machine Scheduling Problem: An Experimental Study”, in Keshav Dahal, Kay Chan Tan and Peter Cowling (editors), *Evolutionary Scheduling*, Chapter 6, pp. 143–164, Springer-Verlag, Berlin, Germany, 2007, ISBN 3-540-48582-1.
16. Carlos A. Coello Coello, “Evolutionary Algorithms: Basic Concepts and Applications in Biometrics”, in Svetlana N. Yanushkevich, Patrick S.P. Wang, Marina L. Gavrilova and Sargur N. Srihari (editors), *Image Pattern Recognition: Synthesis and Analysis in Biometrics*, Chapter 12, pp. 289–320, World Scientific, Singapore, 2007, ISBN 981-256-908-1.
17. Efrén Mezura-Montes, Edgar A. Portilla-Flores, Carlos A. Coello Coello, Jaime Alvarez-Gallegos and Carlos A. Cruz-Villar, “An Evolutionary Approach to Solve a Novel Mechatronic Multiobjective Optimization Problem”, in Patrick Siarry and Zbigniew Michalewicz (editors), *Advances in Metaheuristic Methods for Hard Optimization*, Chapter 16, pp. 329–351, Springer, Berlin, Germany, 2008, ISBN 978-3-540-72959-4.
18. Efrén Mezura-Montes and Carlos A. Coello Coello, “Constrained Optimization via Multiobjective Evolutionary Algorithms”, in Joshua Knowles, David Corne and Kalyanmoy Deb (Editors), *Multi-Objective Problem Solving from Nature: From Concepts to Applications*, Chapter 3, pp. 53–75, Springer, Berlin, Germany, 2008, ISBN 978-3-540-72963-1.
19. Ricardo Landa-Becerra, Luis V. Santana-Quintero and Carlos A. Coello Coello, “Knowledge Incorporation in Multi-Objective Evolutionary Algorithms”, in Ashish Ghosh, Satchidananda Dehuri and Susmita Ghosh (editors), *Multi-objective Evolutionary Algorithms for Knowledge Discovery from Data Bases*, Chapter 2, pp. 23–46, Springer, Berlin, Germany 2008, ISBN 978-3-540-77466-2.
20. Efrén Mezura-Montes, Margarita Reyes-Sierra and Carlos A. Coello Coello, “Multi-Objective Optimization using Differential Evolution: A Survey of the State-of-the-Art”, in Uday K. Chakraborty (editor), *Advances in Differential Evolution*, Chapter 7, pp. 173–196, Springer-Verlag, Berlin, Germany, 2008, ISBN 978-3-540-68827-3.
21. Alfredo G. Hernández-Díaz, Luis V. Santana-Quintero, Carlos A. Coello Coello, Rafael Caballero, and Julián Molina, “Rough Sets Theory for Multi-Objective Optimization Problems”, in Carlos Cotta, Simeon Reich, Robert Schaefer and Antoni Ligęza (editors), *Knowledge-Driven Computing*, Chapter 6, pp. 81–98, Springer-Verlag, Berlin, Germany, 2008, ISBN 978-3-540-77474-7.
22. Antonio López Jaimes and Carlos A. Coello Coello, “An Introduction to Multi-Objective Evolutionary Algorithms and some of Their Potential Uses in Biology”, in Tomasz Smolinski, Mariofanna G. Milanova and Aboul-Ella Hassanien (editors), *Applications of Computational Intelligence in Biology: Current Trends and Open Problems*, Chapter 4, pp. 79–102, Springer, Berlin, Germany, 2008, ISBN 978-3-540-78533-0.
23. El-Ghazali Talbi, Sanaz Mostaghim, Tatsuya Okabe, Hisao Ishibuchi, Günter Rudolph and Carlos A. Coello Coello, “Parallel Approaches for Multi-objective Optimization”, in Jürgen Branke, Kalyanmoy Deb, Kaisa Miettinen and Roman Slowinski (editors), *Multiobjective Optimization. Interactive and Evolutionary Approaches*, Chapter 13, pp. 349–372, Springer, Lecture Notes in Computer Science Vol. 5252, Berlin, Germany, 2008, ISBN 978-3-540-88907-6.
24. Luis V. Santana-Quintero, Noel Ramírez-Santiago and Carlos A. Coello Coello, “Towards a More Efficient Multi-Objective Particle Swarm Optimizer”, in Lam Thu Bui and Sameer Alam (editors), *Multi-Objective Optimization in Computational Intelligence: Theory and Practice*, Chapter IV, pp. 76–105, Information Science Reference, Hershey, USA, 2008, ISBN 978-1-59904-498-9.

25. Fabio Freschi, Carlos A. Coello Coello and Maurizio Repetto, “Multiobjective Optimization and Artificial Immune Systems: A Review”, in Hongwei Mo (editor), *Handbook of Research on Artificial Immune Systems and Natural Computing: Applying Complex Adaptive Technologies*, Chapter I, pp. 1–21, Medical Information Science Reference, Hershey, USA, 2009, ISBN 978-1-60566-310-4.
26. Antonio López Jaimes and Carlos A. Coello Coello, “Multi-Objective Evolutionary Algorithms: A Review of the State-of-the-Art and some of their Applications in Chemical Engineering”, in Rangaiah Gade Pandu (editor), *Multi-Objective Optimization Techniques and Applications in Chemical Engineering*, Chapter 3, pp. 61–90, World Scientific, Singapore, 2009, ISBN 978-981-283-651-9.
27. Guillermo Leguizamón and Carlos Coello Coello, “Boundary Search for Constrained Numerical Optimization Problems”, in Efrén Mezura-Montes (editor), *Constraint-Handling in Evolutionary Optimization*, Chapter 2, pp. 25–49, Springer-Verlag, Berlin, Germany, 2009, ISBN 978-3-642-00618-0.
28. Antonio López Jaimes, Luis Vicente Santana Quintero and Carlos A. Coello Coello, “Ranking Methods in Many-objective Evolutionary Algorithms”, in Raymond Chiong (editor), *Nature-Inspired Algorithms for Optimisation*, Chapter 15, pp. 413–434, Springer, Berlin, Germany, 2009, ISBN 978-3-642-00266-3.
29. Antonio López Jaimes and Carlos A. Coello Coello, “Applications of Parallel Platforms and Models in Evolutionary Multi-Objective Optimization”, in Andrew Lewis, Sanaz Mostaghim and Marcus Randall (editors), *Biologically-Inspired Optimisation Methods*, Chapter 2, pp. 23–49, Springer, Berlin, Germany, 2009, ISBN 978-3-642-01261-7.
30. Julio Barrera and Carlos A. Coello Coello, “A Review of Particle Swarm Optimization Methods used for Multimodal Optimization”, in Chee-Peng Lim, Lakhmi C. Jain and Satchidananda Dehuri (editors), *Innovations in Swarm Intelligence*, Chapter 2, pp. 9–37, Springer-Verlag, Berlin, Germany, 2009, ISBN 978-3-642-04224-9.
31. Satchidananda Dehuri, Susmita Ghosh and Carlos A. Coello Coello, “An Introduction to Swarm Intelligence for Multi-objective Problems in Data Mining”, in Carlos Artemio Coello Coello, Satchidananda Dehuri and Susmita Ghosh (editors), *Swarm Intelligence for Multi-objective Problems in Data Mining*, pp. 1–17, Springer, Berlin, Studies in Computational Intelligence Vol. 242, 2009, ISBN 978-3-642-03624-8.
32. Juan Carlos Fuentes Cabrera and Carlos A. Coello Coello, “Micro-MOPSO: A Multi-Objective Particle Swarm Optimizer that Uses a Very Small Population Size”, in Nadia Nedjah, Leandro dos Santos Coelho and Luiza de Macedo de Mourelle (editors), *Multi-Objective Swarm Intelligent Systems. Theory & Experiences*, Chapter 4, pp. 83–104, Springer, Berlin, Germany, 2010, ISBN 978-3-642-05164-7.
33. Luis V. Santana-Quintero, Alfredo Arias Montañó and Carlos A. Coello Coello, “A Review of Techniques for Handling Expensive Functions in Evolutionary Multi-Objective Optimization”, in Yoel Tenne and Chi-Keong Goh (editors), *Computational Intelligence in Expensive Optimization Problems*, Chapter 2, pp. 29–59, Springer, Berlin, Germany, 2010, ISBN 978-3-642-10700-9.
34. Carlos A. Coello Coello, Clarisse Dhaenens and Laetitia Jourdan, “Multi-Objective Combinatorial Optimization: Problematic and Context”, in Carlos A. Coello Coello, Clarisse Dhaenens and Laetitia Jourdan (editors), *Advances in Multi-Objective Nature Inspired Computing*, pp. 1–21, Springer, Berlin, Studies in Computational Intelligence Vol. 272, 2010, ISBN 978-3-642-11217-1.
35. Julio Barrera and Carlos A. Coello Coello, “Test Function Generators for Assessing Performance of PSO Algorithms in Multimodal Optimization”, in Bijaya Ketan Panigrahi, Yuhui Shi and Meng-Hiot Lim (editors), *Handbook on Swarm Intelligence - Concepts, Principles and Applications*, Chapter 4, pp. 89–117, Springer-Verlag, Berlin, Germany, 2011, ISBN 978-3-642-17389-9. **(Outstanding Chapter Award)**
36. Carlos A. Coello Coello, “Fundamentals of Evolutionary Multi-Objective Optimization”, in Bogdan M. Wilamowski and J. David Irwin (Editors), *Industrial Electronics Handbook. Intelligent Systems*, Second Edition, Chapter 25, pp. 25-1–25-11, CRC Press, Boca Raton, Florida, USA, 2011, ISBN 978-1-4398-0283-0.
37. Alfredo Arias Montañó, Carlos A. Coello Coello and Efrén Mezura-Montes, “Evolutionary Algorithms Applied to Multi-Objective Aerodynamic Shape Optimization”, in Slawomir Koziel and Xin-She Yang (editors), *Computational Optimization, Methods and Algorithms*, Chapter 10, pp. 211–240, Springer, Berlin, Germany, 2011, ISBN 978-3-642-20858-4.
38. Antonio López Jaimes, Saúl Zapotecas Martínez and Carlos A. Coello Coello, “An Introduction to Multiobjective Optimization Techniques”, in António Gaspar-Cunha and José António Covas (editors), *Optimization in Polymer Processing*, Chapter 3, pp. 29–57, Nova Science Publishers, New York, 2011, ISBN 978-1-61122-818-2.
39. Guillermo Leguizamón and Carlos A. Coello Coello, “Multi-Objective Ant Colony Optimization: A Taxonomy and Review of Approaches”, in Satchidananda Dehuri, Susmita Ghosh and Sung Bae Cho (editors), *Integration of Swarm Intelligence and Artificial Neural Network*, Chapter 3, pp. 67–94, World Scientific, Singapore, 2011, ISBN 978-981-4280-14-3.
40. Mohsen Davarynejad, Jos Vrancken, Jan van den Berg, and Carlos A. Coello Coello, “A Fitness Granulation Approach for Large-Scale Structural Design Optimization”, in Raymond Chiong, Thomas Weise and Zbigniew Michalewicz (editors), *Variants of Evolutionary Algorithms for Real-World Applications*, pp. 245–280, Springer, Berlin, 2011, ISBN 978-3-642-23423-1.

41. Luis Gerardo de la Fraga and Carlos A. Coello Coello, “A Review of Applications of Evolutionary Algorithms in Pattern Recognition”, in Patrick S.P. Wang (editor), *Pattern Recognition, Machine Intelligence and Biometrics*, pp. 3–28, Higher Education Press, Beijing and Springer-Verlag, Berlin, 2011, ISBN 978-3-642-22406-5.
42. Guillermo Leguizamón and Carlos A. Coello Coello, “An Introduction to the Use of Evolutionary Computation Techniques for Dealing with ECG Signals”, in Adam Gacek and Witold Pedrycz (editors), *ECG Signal Processing, Classification and Interpretation: A Comprehensive Framework of Computational Intelligence*, Chapter 6, pp. 135–153, Springer, London, 2012, ISBN 978-0-85729-867-6.
43. Victoria S. Aragón, Susana C. Esquivel and Carlos A. Coello Coello, “Artificial Immune System for Solving Dynamic Constrained Optimization Problems”, in Enrique Alba, Amir Nakib and Patrick Siarry (editors), *Metaheuristics for Dynamic Optimization*, pp. 225–263, Springer, ISBN 978-3-642-30664-8, Berlin, Germany, 2013.
44. Adriana Lara, Oliver Schütze and Carlos A. Coello Coello, “On Gradient-based Local Search to Hybridize Multi-objective Evolutionary Algorithms”, in Emilia Tantar, Alexandru-Adrian Tantar, Pascal Bouvry, Pierre Del Moral, Pierrick Legrand, Carlos A. Coello Coello and Oliver Schütze (editors), *EVOLVE - A bridge between Probability, Set Oriented Numerics and Evolutionary Computation*, Chapter 9, pp. 305–332, Springer-Verlag, Heidelberg, Germany, Studies in Computational Intelligence Vol. 447, 2013, ISBN 978-3-642-32725-4.
45. Antonio López Jaimes and Carlos A. Coello Coello, “Interactive Approaches Applied to Multiobjective Evolutionary Algorithms”, in Michael Doumpos and Evangelos Grigoroudis (editors), *Multicriteria decision aid and artificial intelligence: Theory and applications*, Chapter 8, pp. 191–207, John Wiley & Sons, Chichester, UK, 2013, ISBN 978-1-119-97639-4.
46. Alfredo Arias Montaña, Carlos A. Coello Coello and Oliver Schütze, “Multiobjective Optimization for Space Mission Design Problems”, in Massimiliano Vasile and Victor M. Becerra (Editors), *Computational Intelligence in Aerospace Sciences*, pp. 1–46, AIAA Press, Progress in Astronautics and Aeronautics Vol. 244, Reston, Virginia, USA, 2014, ISBN 978-1-62410-260-8.
47. Carlos A. Coello Coello, “Multi-objective Evolutionary Algorithms in Real-World Applications: Some Recent Results and Current Challenges”, in David Greiner, Blas Galván, Jacques Périaux, Nicolas Gauger, Kyriakos Giannakoglou and Gabriel Winter (editors), *Advances in Evolutionary and Deterministic Methods for Design, Optimization and Control in Engineering and Sciences*, Chapter 1, pp. 3–18, Springer, Computational Methods in Applied Sciences Vol. 36, Switzerland, 2015, ISBN 978-3-319-11540-5.
48. Antonio López Jaimes and Carlos A. Coello Coello, “Many-objective Problems: Challenges and Methods”, in Janusz Kacprzyk and Witold Pedrycz (editors), *Springer Handbook of Computational Intelligence, Part E*, pp. 1033–1046, Springer-Verlag, Heidelberg, Germany, 2015, ISBN 978-3-662-43504-5.
49. Carlos A. Coello Coello, Carlos Segura and Gara Miranda, “History and Philosophy of Evolutionary Computation”, in Plamen Parvanov Angelov (editor), *Handbook on Computational Intelligence*, Volume 2: Evolutionary Computation, Hybrid Systems, and Applications, Chapter 14, pp. 509–545, World Scientific, Singapore, 2016, ISBN 978-981-4675-04-8.
50. Saku Kukkonen and Carlos A. Coello Coello, “Generalized Differential Evolution for Numerical and Evolutionary Optimization”, in Oliver Schütze, Leonardo Trujillo, Pierrick Legrand and Yazmin Maldonado (Editors), *NEO 2015. Results of the Numerical and Evolutionary Optimization Workshop NEO 2015 held at September 23-25 2016 in Tijuana, Mexico*, pp. 253–279, Springer, Switzerland, 2017, ISBN 1860-9503.
51. Saúl Zapotecas-Martínez, Adriana Lara and Carlos A. Coello Coello, “Hybridizing MOEAs with Mathematical-Programming Techniques”, in Raghu Nandan Sengupta, Aparna Gupta and Joydeep Gupta (Editors), *Decision Sciences. Theory and Practice*, CRC Press, Boca Raton, Florida, 2017. ISBN 978-1-4665-6430-5.
52. Carlos A. Coello Coello, “Multiobjective Optimization”, in Mauricio G.C. Resende, Rafael Martí and Panos M. Pardalos (editors), *Handbook of Heuristics*, Springer, 2017 (**accepted**).
53. Carlos A. Coello Coello, Raquel Hernández Gómez and Luis Miguel Antonio, “Fundamentals and Practice of Evolutionary Optimization”, in *Wiley Encyclopedia of Electrical and Electronics Engineering*, Wiley, 2018 (**accepted**).
54. Juan M. Ramirez, Miguel A. Medina and Carlos A. Coello Coello, “A multi-objective teaching-learning algorithm for power losses reduction in power systems”, in Ahmed Zobaa, Shady H.E. Abdel Aleem and Almoataz Youssef Abdalaziz (editors), *Classical and Recent Aspects of Power System Optimization*, Chapter 18, Elsevier, 2018 (**accepted**).

## Papers Published in International Journals

1. Carlos A. Coello Coello, Alan D. Christiansen and Francisco Alonso Farrera, “A Genetic Algorithm for the Optimal Design of Axially Loaded Non-prismatic Columns”, *Civil Engineering Systems*, Vol. 14, No. 2, pp. 111–146, 1996.
2. Carlos A. Coello Coello and Alan D. Christiansen, “A simple genetic algorithm for the design of reinforced concrete beams”, *Engineering with Computers*, Vol. 13, No. 4, pp. 185–196, 1997.

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4. Carlos A. Coello Coello and Alan D. Christiansen, "Two new GA-based methods for multiobjective optimization", *Civil Engineering and Environmental Systems*, Vol. 15, No. 3, pp. 207–243, 1998.
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7. Carlos A. Coello Coello, "A Comprehensive Survey of Evolutionary-Based Multiobjective Optimization Techniques", *Knowledge and Information Systems*, Vol. 1, No. 3, pp. 269–308, August 1999.
8. Carlos A. Coello Coello, "Use of a Self-Adaptive Penalty Approach for Engineering Optimization Problems", *Computers in Industry*, Vol. 41, No. 2, pp. 113–127, January 2000.
9. Carlos A. Coello Coello, "Treating Constraints as Objectives for Single-Objective Evolutionary Optimization", *Engineering Optimization*, Vol. 32, No. 3, pp. 275–308, February, 2000.
10. Carlos A. Coello Coello, Alan D. Christiansen and Arturo Hernández Aguirre, "Use of Evolutionary Techniques to Automate the Design of Combinational Circuits", *International Journal of Smart Engineering System Design*, Vol. 2, No. 4, pp. 299–314, June 2000.
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12. Carlos A. Coello Coello and Alan D. Christiansen, "Multiobjective Optimization of Trusses using Genetic Algorithms", *Computers & Structures*, Vol. 75, No. 6, pp. 647–660, May 2000.
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14. Carlos A. Coello Coello, Alan D. Christiansen and Arturo Hernández Aguirre, "Towards Automated Evolutionary Design of Combinational Circuits", *Computers and Electrical Engineering*, Vol. 27, No. 1, pp. 1–28, January 2001.
15. Carlos A. Coello Coello, Rosa Laura Zavala Gutiérrez, Benito Mendoza García and Arturo Hernández Aguirre, "Automated Design of Combinational Logic Circuits using the Ant System", *Engineering Optimization*, Vol. 34, No. 2, pp. 109–127, March 2002.
16. Carlos A. Coello Coello, "Theoretical and Numerical Constraint-Handling Techniques used with Evolutionary Algorithms: A Survey of the State of the Art", *Computer Methods in Applied Mechanics and Engineering*, Vol. 191, No. 11–12, pp. 1245–1287, January 2002.
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223. Subhodip Biswas, Swagatam Das, Ponnuthurai N. Suganthan and Carlos A. Coello Coello, “Evolutionary Multiobjective Optimization in Dynamic Environments: A Set of Novel Benchmark Functions”, in *2014 IEEE Congress on Evolutionary Computation (CEC’2014)*, pp. 3192–3199, IEEE Press, Beijing, China, 6-11 July 2014, ISBN 978-1-4799-1488-3.
224. Ivan Chaman García, Carlos A. Coello Coello and Alfredo Arias-Montaña, “MOPSOhv: A New Hypervolume-based Multi-Objective Particle Swarm Optimizer”, in *2014 IEEE Congress on Evolutionary Computation (CEC’2014)*, pp. 266–273, IEEE Press, Beijing, China, 6-11 July 2014, ISBN 978-1-4799-1488-3.
225. Carlos Segura, Carlos A. Coello Coello, Eduardo Segredo and Coromoto Leon, “An Analysis of the Automatic Adaptation of the Crossover Rate in Differential Evolution”, in *2014 IEEE Congress on Evolutionary Computation (CEC’2014)*, pp. 459–466, IEEE Press, Beijing, China, 6-11 July 2014, ISBN 978-1-4799-1488-3.
226. Saúl Zapotecas Martínez and Carlos A. Coello Coello, “A Multi-objective Evolutionary Algorithm based on Decomposition for Constrained Multi-objective Optimization”, in *2014 IEEE Congress on Evolutionary Computation (CEC’2014)*, pp. 429–436, IEEE Press, Beijing, China, 6-11 July 2014, ISBN 978-1-4799-1488-3.
227. Saúl Zapotecas Martínez, Alfredo Arias Montaña and Carlos A. Coello Coello, “Constrained Multi-Objective Aerodynamic Shape Optimization via Swarm Intelligence”, in *2014 Genetic and Evolutionary Computation Conference (GECCO 2014)*, pp. 81–88, ACM Press, Vancouver, Canada, July 12-16, 2014, ISBN 978-1-4503-2662-9.
228. Saúl Zapotecas-Martínez, Víctor A. Sosa-Hernández, Hernán Aguirre, Kiyoshi Tanaka and Carlos A. Coello Coello, “Using a Family of Curves to Approximate the Pareto Front of a Multi-Objective Optimization Problem”, in Thomas Bartz-Beielstein, Jürgen Branke, Bogdan Filipič and Jim Smith (Editors), *Parallel Problem Solving from Nature – PPSN XIII, 13th International Conference*, pp. 682–691, Springer, Lecture Notes in Computer Science Vol. 8672, Ljubljana, Slovenia, September 13-17, 2014, ISBN 978-3-319-10761-5 (nominated to **best paper award**).
229. Adriana Menchaca-Mendez and Carlos A. Coello Coello, “MH-MOEA: A New Multi-Objective Evolutionary Algorithm based on the Maximin Fitness Function and the Hypervolume Indicator”, in Thomas Bartz-Beielstein, Jürgen Branke, Bogdan Filipič and Jim Smith (Editors), *Parallel Problem Solving from Nature – PPSN XIII, 13th International Conference*, pp. 652–661, Springer, Lecture Notes in Computer Science Vol. 8672, Ljubljana, Slovenia, September 13-17, 2014, ISBN 978-3-319-10761-5.
230. Carlos A. Coello Coello, “An Introduction to Evolutionary Multi-Objective Optimization with Some Applications in Pattern Recognition”, in Eduardo Bayro-Corrochano and Edwin Hancock (Editors), *Progress in Pattern Recognition, Image Analysis, Computer Vision, and Applications, 19th Iberoamerican Congress, CIARP 2014*, pp. 1–13, Springer, Lecture Notes in Computer Science Vol. 8827, Puerto Vallarta, México, November 2-5, 2014 (**invited paper**).
231. Alejandro Rosales, Jesus A. Gonzalez, Carlos A. Coello Coello, Carlos A. Reyes-García and Hugo Jair Escalante, “Evolutionary Multi-Objective Approach for Prototype Generation and Feature Selection”, in Eduardo Bayro-Corrochano and Edwin Hancock (Editors), *Progress in Pattern Recognition, Image Analysis, Computer Vision, and Applications, 19th Iberoamerican Congress, CIARP 2014*, pp. 424–431, Springer, Lecture Notes in Computer Science Vol. 8827, Puerto Vallarta, México, November 2-5, 2014.
232. Adriana Menchaca, Elizabeth Montero, María Cristina Riff and Carlos Coello Coello, “A More Efficient Selection Scheme in iSMS-EMOA”, in Ana L.C. Bazzan and Karim Pichara (Editors), *Advances in Artificial Intelligence – IBERAMIA 2014, 14th Iberoamerican Conference on AI*, pp. 371–380, Springer, Lecture Notes in Artificial Intelligence Vol. 8864, Santiago de Chile, Chile, November 24-27, 2014.
233. Jesus Moises Osorio Velazquez, Carlos A. Coello Coello and Alfredo Arias-Montaña, “Multi-Objective Compact Differential Evolution”, in *2014 IEEE Symposium on Differential Evolution* (part of the *2014 IEEE Symposium Series on Computational Intelligence*), pp. 49–56, IEEE Press, ISBN 978-1-4799-4462-0, Orlando, Florida, USA, December 9-12, 2014.
234. Adriana Cervantes-Castillo, Efrén Mezura-Montes and Carlos A. Coello Coello, “An Empirical Comparison of Two Crossover Operators in Real-Coded Genetic Algorithms for Constrained Numerical Optimization Problems”, in *Proceedings of the International Autumn Meeting on Power, Electronics and Computing (ROPEC 2014)*, IEEE Press, Ixtapa, México, 5-7 November, 2014, ISBN 978-1-4799-5683-8.
235. Adán-Enrique Aguilar-Justo, Efrén Mezura-Montes, and Carlos A. Coello Coello, “Memetic Modified Artificial Bee Colony for Constrained Optimization”, in *Proceedings of the International Autumn Meeting on Power, Electronics and Computing (ROPEC 2014)*, IEEE Press, Ixtapa, México, 5-7 November, 2014, ISBN 978-1-4799-5683-8.
236. Adriana Menchaca-Mendez and Carlos A. Coello Coello, “GD-MOEA: A New Multi-Objective Evolutionary Algorithm based on the Generational Distance Indicator”, in António Gaspar-Cunha, Carlos Henggeler Antunes and Carlos Coello Coello (Editors), *Evolutionary Multi-Criterion Optimization, 8th International Conference, EMO 2015*, pp. 156–170, Springer. Lecture Notes in Computer Science Vol. 9018, Guimarães, Portugal, March 29 - April 1, 2015.

237. Edgar Manóatl Lopez, Luis Miguel Antonio and Carlos A. Coello Coello, “A GPU-Based Algorithm for a Faster Hypervolume Contribution Computation”, in António Gaspar-Cunha, Carlos Henggeler Antunes and Carlos Coello Coello (editors), *Evolutionary Multi-Criterion Optimization, 8th International Conference, EMO 2015*, pp. 80–94, Springer. Lecture Notes in Computer Science Vol. 9019, Guimarães, Portugal, March 29 - April 1, 2015.
238. José A. Molinet Berenguer and Carlos A. Coello Coello, “Evolutionary Many-Objective Optimization Based on Kuhn-Munkres’ Algorithm”, in António Gaspar-Cunha, Carlos Henggeler Antunes and Carlos Coello Coello (editors), *Evolutionary Multi-Criterion Optimization, 8th International Conference, EMO 2015*, pp. 3–17, Springer. Lecture Notes in Computer Science Vol. 9019, Guimarães, Portugal, March 29 - April 1, 2015.
239. Adriana Menchaca-Mendez and Carlos A. Coello Coello, “GDE-MOEA : A New MOEA based on the Generational Distance indicator and  $\epsilon$ -dominance”, in *2015 IEEE Congress on Evolutionary Computation*, pp. 947–955, IEEE Press, Sendai, Japan, 25-28 May 2015, ISBN 978-1-4792-4.
240. Luis Miguel Antonio and Carlos A. Coello Coello, “A Non-cooperative Game for Faster Convergence in Cooperative Coevolution for Multi-objective Optimization”, in *2015 IEEE Congress on Evolutionary Computation*, pp. 109–116, IEEE Press, Sendai, Japan, 25-28 May 2015, ISBN 978-1-4792-4.
241. Saúl Zapotecas-Martínez, Hernán E. Aguirre, Kiyoshi Tanaka and Carlos A. Coello Coello, “On the Low-Discrepancy Sequences and their Use in MOEA/D for High-Dimensional Objective Spaces”, in *2015 IEEE Congress on Evolutionary Computation*, pp. 2835–2842, IEEE Press, Sendai, Japan, 25-28 May 2015, ISBN 978-1-4792-4.
242. Raquel Hernández Gómez and Carlos A. Coello Coello, “Improved Metaheuristic Based on the  $R2$  Indicator for Many-Objective Optimization”, in *2015 Genetic and Evolutionary Computation Conference (GECCO 2015)*, pp. 679–686, ACM Press, Madrid, Spain, July 11-15, 2015, ISBN 978-1-4503-3472-3.
243. Luis Miguel Antonio and Carlos A. Coello Coello, “Particle Swarm Optimization Based on Linear Assignment Problem Transformations”, in *2015 Genetic and Evolutionary Computation Conference (GECCO 2015)*, pp. 57–64, ACM Press, Madrid, Spain, July 11-15, 2015, ISBN 978-1-4503-3472-3.
244. Stjepan Picek, Carlos A. Coello Coello, Domagoj Jakobovic and Nele Mentens, “Evolutionary Algorithms for Finding Short Addition Chains: Going to the Distance”, in Francisco Chicano, Bin Hu and Pablo García-Sánchez (Editors), *Evolutionary Computation in Combinatorial Optimization, 16th European Conference, EvoCOP 2016*, pp. 121–137, Springer, Lecture Notes in Computer Science Vol. 9595, Porto, Portugal, March 30 - April 1, 2016.
245. Raquel Hernández Gómez, Carlos A. Coello Coello and Enrique Alba Torres, “A Multi-Objective Evolutionary Algorithm based on Parallel Coordinates”, *2016 Genetic and Evolutionary Computation Conference (GECCO 2016)*, pp. 565–572, ACM Press, Denver, Colorado, USA, July 2016, ISBN 978-1-4503-4206-3 (**best paper award**).
246. Adriana Menchaca-Mendez, Carlos Hernandez and Carlos Coello Coello, “ $\Delta_p$ -MOEA: A New Multi-Objective Evolutionary Algorithm Based on the  $\Delta_p$  Indicator”, in *2016 IEEE Congress on Evolutionary Computation (CEC’2016)*, pp. 3753–3760, IEEE Press, Vancouver, Canada, 24-29 July, 2016, ISBN 978-1-5090-0623-9.
247. Luis Miguel Antonio and Carlos Coello Coello, “Indicator-Based Cooperative Coevolution for Multi-objective Optimization”, in *2016 IEEE Congress on Evolutionary Computation (CEC’2016)*, pp. 991–998, IEEE Press, Vancouver, Canada, 24-29 July, 2016, ISBN 978-1-5090-0623-9.
248. Edgar Manóatl Lopez and Carlos Coello Coello, “IGD+-EMOA: A Multi-Objective Evolutionary Algorithm based on IGD+”, in *2016 IEEE Congress on Evolutionary Computation (CEC’2016)*, pp. 999–1006, IEEE Press, Vancouver, Canada, 24-29 July, 2016, ISBN 978-1-5090-0623-9.
249. Saku Kukkonen and Carlos Coello Coello, “Applying Exponential Weighting Moving Average Control Parameter Adaptation Technique with Generalized Differential Evolution”, in *2016 IEEE Congress on Evolutionary Computation (CEC’2016)*, pp. 4755–4762, IEEE Press, Vancouver, Canada, 24-29 July, 2016, ISBN 978-1-5090-0623-9.
250. Saber Elsayed, Ruhul Sarker and Carlos Coello Coello, “Enhanced Multi-operator Differential Evolution for Constrained Optimization”, in *2016 IEEE Congress on Evolutionary Computation (CEC’2016)*, pp. 4191–4198, IEEE Press, Vancouver, Canada, 24-29 July, 2016, ISBN 978-1-5090-0623-9.
251. Jesús Guillermo Falcón-Cardona and Carlos A. Coello Coello, “iMOACO<sub>R</sub>: A New Indicator-Based Multi-Objective Ant Colony Optimization Algorithm for Continuous Search Spaces”, in Julia Handl, Emma Hart, Peter R. Lewis, Manuel López-Ibáñez, Gabriela Ochoa and Ben Paechter (Editors), *Parallel Problem Solving from Nature – PPSN XIV, 14th International Conference*, pp. 389–398, Springer. Lecture Notes in Computer Science Vol. 9921, Edinburgh, UK, September 17-21, 2016, ISBN 978-3-319-45822-9.
252. Edgar Manóatl Lopez and Carlos A. Coello Coello, “A Parallel Multi-objective Memetic Algorithm Based on the IGD+ Indicator”, in Julia Handl, Emma Hart, Peter R. Lewis, Manuel López-Ibáñez, Gabriela Ochoa and Ben Paechter (Editors), *Parallel Problem Solving from Nature – PPSN XIV, 14th International Conference*, pp. 473–482, Springer. Springer. Lecture Notes in Computer Science Vol. 9921, Edinburgh, UK, September 17-21, 2016, ISBN 978-3-319-45822-9.

253. Luis Miguel Antonio and Carlos A. Coello Coello, “Decomposition-Based Approach for Solving Large Scale Multi-objective Problems”, in Julia Handl, Emma Hart, Peter R. Lewis, Manuel López-Ibáñez, Gabriela Ochoa and Ben Paechter (Editors), *Parallel Problem Solving from Nature – PPSN XIV, 14th International Conference*, pp. 525–534, Lecture Notes in Computer Science Vol. 9921, Edinburgh, UK, September 17-21, 2016, ISBN 978-3-319-45822-9.
254. Raquel Hernández-Gómez, Carlos A. Coello Coello and Enrique Alba, “A Parallel Version of SMS-EMOA for Many-Objective Optimization Problems”, in Julia Handl, Emma Hart, Peter R. Lewis, Manuel López-Ibáñez, Gabriela Ochoa and Ben Paechter (Editors), *Parallel Problem Solving from Nature – PPSN XIV, 14th International Conference*, pp. 568–577, Springer. Lecture Notes in Computer Science Vol. 9921, Edinburgh, UK, September 17-21, 2016, ISBN 978-3-319-45822-9.
255. Miriam Pescador-Rojas, Raquel Hernández Gómez, Elizabeth Montero, Nicolás Rojas-Morales, María-Cristina Riff and Carlos A. Coello Coello, “An Overview of Weighted and Unconstrained Scalarizing Functions”, in Heike Trautmann, Günter Rudolph, Kathrin Klamroth, Oliver Schütze, Margaret Wiecek, Yaochu Jin and Christian Grimme (Editors), *Evolutionary Multi-Criterion Optimization, 9th International Conference, EMO 2017*, pp. 499–513, Springer, Lecture Notes in Computer Science Vol. 10173, Münster, Germany, March 19-22, 2017, ISBN 978-3-319-54156-3.
256. Alejandro Rosales-Pérez, Andrés E. Gutiérrez-Rodríguez, José C. Ortiz-Bayliss, Hugo Terashima-Marín and Carlos A. Coello Coello, “Evolutionary Multilabel Hyper-Heuristic Design”, in *2017 IEEE Congress on Evolutionary Computation (CEC’2017)*, pp. 2622–2629, IEEE Press, San Sebastián, Spain, June 5-8, 2017, ISBN 978-1-5090-4601-0.
257. Edgar Manóatl Lopez and Carlos A. Coello Coello, “Improving the Integration of the IGD<sup>+</sup> Indicator into the Selection Mechanism of a Multi-objective Evolutionary Algorithm”, in *2017 IEEE Congress on Evolutionary Computation (CEC’2017)*, pp. 2683–2690, IEEE Press, San Sebastián, Spain, June 5-8, 2017, ISBN 978-1-5090-4601-0.
258. Iván Amaya, José Carlos Ortiz-Bayliss, Andrés Eduardo Gutiérrez-Rodríguez, Hugo Terashima-Marín and Carlos A. Coello Coello, “Improving Hyper-heuristic Performance Through Feature Transformation”, in *2017 IEEE Congress on Evolutionary Computation (CEC’2017)*, pp. 2614–2621, IEEE Press, San Sebastián, Spain, June 5-8, 2017, ISBN 978-1-5090-4601-0.
259. Andres Eduardo Gutiérrez Rodríguez, José Carlos Ortiz Bayliss, Alejandro Rosales Pérez, Ivan Mauricio Amaya Contreras, Santiago Enrique Conant Pablos, Hugo Terashima Marín and Carlos Artemio Coello Coello, “Applying Automatic Heuristic-Filtering to Improve Hyper-heuristic Performance”, in *2017 IEEE Congress on Evolutionary Computation (CEC’2017)*, pp. 2638–2644, IEEE Press, San Sebastián, Spain, June 5-8, 2017, ISBN 978-1-5090-4601-0.
260. Raquel Hernández Gómez and Carlos A. Coello Coello, “A Hyper-Heuristic of Scalarizing Functions”, in *2017 Genetic and Evolutionary Computation Conference (GECCO’2017)*, pp. 577–584, ACM Press, Berlin, Germany, 15-19 July 2017, ISBN 978-1-4503-4920-8.
261. Carlos A. Coello Coello, “Recent Results and Open Problems in Evolutionary Multiobjective Optimization”, in Carlos Martín-Vide, Roman Neruda and Miguel A. Vega-Rodríguez (Editors), *Theory and Practice of Natural Computing, 6th International Conference, TPNC 2017*, pp. 3–21, Springer. Lecture Notes in Computer Science Vol. 10687, Prague, Czech Republic, December 18-20, 2017, ISBN 978-3-319-71068-6. (invited paper)

## Courses Taught

- **An Introduction to Evolutionary Computation** (MSc level). 48 hours. It has been taught 16 times at CINVESTAV-IPN since 2001.
- **An Introduction to Evolutionary Multiobjective Optimization** (PhD level). 48 hours. It has been taught 8 times at CINVESTAV-IPN since 2001.
- **Programming Languages** (MSc level). 48 hours. It has been taught 4 times at CINVESTAV-IPN since 2001.
- **Engineering Optimization** (MSc level). 48 hours. It has been taught 4 times at CINVESTAV-IPN since 2001.
- Has taught short courses in Spain, England, Argentina, Chile, India, Bolivia, Colombia, and USA.
- Has taught tutorials at the major conferences in evolutionary computation: the *IEEE Congress on Evolutionary Computation*, the *Genetic and Evolutionary Computation Conference* and *Parallel Problem Solving from Nature*. Has also been tutorial speaker at the *First International Conference on Evolutionary Multi-Criterion Optimization* held in Zurich, Switzerland, in 2001, and at the *IEEE Swarm Intelligence Symposium*, held in Indianapolis, USA, in 2003.

## Theses Supervised

- Has supervised 19 PhD theses (15 at CINVESTAV-IPN, 1 at the Instituto Nacional de Astrofísica, Óptica y Electrónica and 3 at the Universidad Nacional de San Luis, in Argentina). Six of the PhD theses that he has supervised at CINVESTAV-IPN have received awards.

- Has supervised 44 Masters theses (one of them from the University of Nantes, in France). Four of the Masters theses that he has supervised have received awards.
- Has supervised 8 BSc theses.
- Currently supervises 5 PhD theses at CINVESTAV-IPN.

## Editorial Activities

1. Associate Editor of the international journal *IEEE Transactions on Evolutionary Computation* (IEEE Press), 2003–date.
2. Associate Editor of the international journal *Evolutionary Computation* (MIT Press), ISSN 1063-6560/05, 2005–date.
3. Associate Editor of the international journal *Soft Computing* (Springer), ISSN 1432-7643, 2008–2012.
4. Associate Editor of the international journal *Pattern Analysis & Applications* (Springer), ISSN 1433-7541, 2007–date.
5. Associate Editor of the international journal *Journal of Heuristics* (Springer), ISSN 1381-1231, 2006–2012.
6. Associate Editor of the international journal *Computational Optimization and Applications*, (Springer), ISSN 0926-6003, 2006–date.
7. Member of the Editorial Board of the international journal *Engineering Optimization* (Taylor & Francis), ISSN 0305-215X, 2004–date.
8. Member of the Editorial Board of the international journal *Memetic Computing* (Springer), ISSN 1865-9284, 2008–date.
9. Guest Editor of the *IEEE Transactions on Evolutionary Computation* for a special issue on *Evolutionary Multi-Objective Optimization*. The special issue was published as number 2 of the volume 7 (April 2003).
10. Guest Editor of the *European Journal of Operational Research*, for a special issue in *Evolutionary Multi-Objective Optimization*. The special issue was published as number 3 of the volume 181 (16 September 2007).
11. Guest Editor of the journal *IEEE Transactions on Evolutionary Computation* for a special issue on *Differential Evolution*. The special issue was published as number 1 of the volume 15 (February 2011).
12. Guest Editor of the journal *Soft Computing. A Fusion of Foundations, Methodologies and Applications* for a special issue in *Evolutionary Computation on General Purpose Graphics*. The special issue was published as number 2 of the volume 16 (February 2012).
13. Guest Editor of the journal *Soft Computing* for a special issue in *Evolutionary Computing and Complex Systems*. The special issue was published as number 6 of the volume 17 (June 2013).
14. Guest Editor of the journal *Annals of Mathematics and Artificial Intelligence* for a special issue containing extended versions of the best papers presented at the LION 5 conference. The special issue was published as number 4 of the volume 68 (August 2013).
15. Guest Editor of the journal *IEEE Transactions on Evolutionary Computation* for a special issue in *Advances in Multiobjective Evolutionary Algorithms for Data Mining*. The special issue was published as number 1 of the volume 18 (February 2014).
16. Technical reviewer for over 50 international journals and member of the scientific program of over 100 international conferences, including all the major evolutionary computation conferences.

## Conferences and Special Sessions Organization

- General Chair of the *Third International Conference on Evolutionary Multi-Criterion Optimization* (EMO'2005), which took place in Guanajuato, México, from 9 to 11 March, 2005.
- *Track Chair* in the area *Evolutionary Multi-Objective Optimization* at the *2006 Genetic and Evolutionary Computation Conference* (GECCO'2006), Seattle, Washington, USA, 8-12 July, 2006.
- Organizer of a special session on “evolutionary multiobjective optimization”, at the *Congress on Evolutionary Computation* in the years 2000 (San Diego, California, USA), 2004 (Portland, Oregon, USA), 2005 (Edinburgh, Scotland, UK) and 2010 (Barcelona, Spain).
- *Special Sessions Chair* at the *2006 IEEE Congress on Evolutionary Computation* (CEC'2006), Vancouver, Canada, 16-21 July, 2006.
- Member of the *EMO Steering Committee*, since 2008. This committee decides the location of the *International Conference on Evolutionary Multi-Criterion Optimization*, which takes place every two years.

- General Chair of the *IEEE Symposium on Computational Intelligence in Multicriteria Decision-Making* in the years 2007 (Honolulu, Hawaii, USA), 2009 (Nashville, Tennessee, USA) and 2011 (Paris, France).
- Technical Co-Chair of the *2009 IEEE Congress on Evolutionary Computation*, Trondheim, Norway, 2009.
- Program Co-Chair of the *2010 IEEE Congress on Evolutionary Computation*, Barcelona, Spain, 2010.
- *Track Chair* in the area *Evolutionary Multi-Objective Optimization* at the *2011 Genetic and Evolutionary Computation Conference (GECCO'2011)*, Dublin, Ireland, 12-16 July, 2011.
- *Technical Program Committee Chair* of the international conference *Learning and Intelligent Optimization (LION 5)*, Rome, Italy, 17-21 January, 2011.
- Technical Co-Chair of the *2012 IEEE Congress on Evolutionary Computation*, Brisbane, Australia, 2012.
- General Chair of the *2013 IEEE Congress on Evolutionary Computation*, Cancún, México, 2013.
- Program Chair of the *2014 IEEE Congress on Evolutionary Computation*, Beijing, China, 2014.
- Technical Co-Chair of the *2016 IEEE Congress on Evolutionary Computation*, Vancouver, Canada, 2016.
- Program Chair of the *2017 IEEE Congress on Evolutionary Computation*, San Sebastián, Spain, 2017.
- Program Chair of the *2017 Symposium Series on Computational Intelligence (SSCI'2017)*, Honolulu, Hawaii, USA, 2017.
- Technical Co-Chair of the *2018 IEEE Congress on Evolutionary Computation*, Rio de Janeiro, Brazil, 2018.

## IEEE Committees

1. Member-at-Large for *IEEE CIS VP Membership Committee*, 2005.
2. Member of the *IEEE CIS Outstanding Dissertation Award Subcommittee* of the *IEEE Computational Intelligence Society*, 2007.
3. Member of the *IEEE Computational Intelligence Society Nominations Committee*, 2008 and 2012.
4. Member of the *IEEE Computational Intelligence Society Awards Committee*, 2009, 2010, 2011 and 2012.
5. Vice-Chair of the *Evolutionary Computation Technical Committee (ECTC)* of the *IEEE Computational Intelligence Society*, 2009.
6. Member of the *IEEE CIS Continuing Education Sub-Committee*, 2009, 2010.
7. Chair of the *Evolutionary Computation Technical Committee (ECTC)* of the *IEEE Computational Intelligence Society*, 2010 and 2011.
8. Member of the *Nominations Committee* of the *IEEE Computational Intelligence Society*, 2012 and 2013.
9. Chair of the *Distinguished Lecturers Program* of the *IEEE Computational Intelligence Society*, 2014 and 2015.
10. IEEE Press Liason for the *IEEE Computational Intelligence Society* in a book series co-edited by Wiley, 2016, 2017 and 2018.

## External Reviewer of PhD Theses

1. External reviewer of a PhD thesis from the University of Valladolid, Spain, October 2000.
2. External reviewer of a PhD thesis from the Polytechnical University of Cataluña, Barcelona, Spain, 2005.
3. External reviewer of a PhD thesis from the University of Las Palmas de Gran Canaria, Spain, 2005.
4. External reviewer of a PhD thesis from the National University of the South, Bahía Blanca, Argentina, 2005.
5. External reviewer of a PhD thesis from *Luleå University of Technology*, Luleå, Sweden, 2006.
6. External reviewer of a PhD thesis from *Tel Aviv University*, Israel, 2006.
7. External reviewer of two PhD theses from the *University of New South Wales at the Australian Defence Force Academy*, Canberra, Australia, 2007 and 2009.
8. External reviewer of four PhD theses from *Nanyang Technological University*, Singapore, 2006, 2009, 2010 and 2011.
9. External reviewer of one PhD thesis from the *National University of Singapore*, Singapore, 2009.
10. External reviewer of one PhD thesis from *Swinburne University of Technology*, Victoria, Australia, 2008.
11. External reviewer of one PhD thesis from *The University of Western Australia*, Australia, 2010.
12. External reviewer of one Masters thesis from the *University of Pretoria*, South Africa, 2010.
13. External reviewer of one PhD thesis from the University of Málaga, Spain, March 2011.
14. External reviewer of one PhD thesis from the *University of Jyväskylä*, Finland, 2011.
15. External reviewer of one PhD thesis from *The University of Adelaide*, Australia, 2013.
16. External reviewer of one PhD thesis from *The University of Pretoria*, South Africa, 2017.

## External Reviewer of Awards and Promotion Applications

1. External referee of the *Shanti Swarup Bhatnagar Prize*, in 2010. This is the most important award granted by the government of India to researchers under the age of 45.
2. External referee of the *Young Scientist Award* granted by the *Technological Research Council (TUBITAK)* from Turkey, 2010.
3. External reviewer of a request for promotion to **Professor** from the *Department of Mathematics and Computer Science* of the *University of Missouri–St. Louis*, St. Louis, Missouri, USA, 2010.
4. External evaluator of a tenure-track application from *Shinshu University*, Nagano, Japan, 2010.
5. External evaluator of a tenure-track application from the *Ort Braude College of Engineering*, Israel, 2010.
6. External evaluator of a tenure-track application from the *University of Texas at El Paso*, USA, 2011.
7. External evaluator of a habilitation request for a promotion to **Professor** from the *University of Münster*, Germany, 2012.
8. External evaluator of a request for promotion to **Professor** from the *Department of Electrical & Computer Engineering* from *Portland State University*, Portland, Oregon, USA, 2012.
9. External evaluator of a request for promotion to **Associate Professor** from the *School of Engineering and Information Technology*, of the *University of New South Wales*, Sydney, Australia, 2013.
10. External evaluator of a tenure-track application from the *Department of Computer Science* of the *University of Ioannina*, Greece, 2013.
11. External evaluator of two requests for promotion to **Professor** from the *Department of Computer Science* of the *University of Georgia*, Georgia, Atlanta, USA, 2013 and 2016.
12. External evaluator of an application for a position of *Professor* at the *Department of Computer Science* of the *City University of Hong Kong*, Hong Kong, 2013.
13. External evaluator of two requests for promotion to **Professor** from the *School of Engineering and Information Technology*, of the *University of New South Wales*, Sydney, Australia, 2015 and 2016.
14. External evaluator of the performance of Italian universities and research institutes during the period 2004–2010, invited by *The National Agency for the Evaluation of Universities and Research Institutes*, 2012 and 2016.
15. External evaluator of a request for promotion to *Associate Professor* from the *University College Dublin*, Ireland, 2013.
16. Evaluation of performance of two researchers requested by the *South Africa's National Research Foundation*, 2015.
17. External evaluator of an application for entering the *Indian National Science Academy*, India, 2016.
18. External evaluator of a request for promotion to *Associate Professor* from the *University of Exeter*, UK, 2016.
19. External evaluator of a request for promotion to *Associate Professor* from the *University of Pretoria*, South Africa, 2016.

## Reviewer of Books and Journal Proposals

1. Reviewer of one proposal for publishing a book with *Springer-Verlag*, London, 2002.
2. Reviewer of two proposals for publishing books with *Springer-Verlag*, Germany, 2006.
3. Reviewer of one proposal for publishing a book with *Cambridge University Press*, UK, 2007.
4. Reviewer of one proposal for publishing a book with *Wiley*, USA, 2008.
5. Reviewer of a proposal for publishing a new journal on swarm and evolutionary computation with *Elsevier*, The Netherlands, 2010.

## Professional Experience

- Teacher Assistant, Computer Science Department, Tulane University, New Orleans Louisiana, USA, 1994–1995.
- Lecturer of the course “Symbolic Computing” (CPSC 319), Computer Science Department, Tulane University, New Orleans, Louisiana, USA, Fall 1995.
- Postdoctoral Fellow, Computer Science Department, Tulane University, New Orleans, Louisiana, USA, June–August 1996. Project: *Use of Genetic Algorithms in Combinational Circuit Design*.



- Assistant Professor, Computer Science Department, DePauw University, Greencastle, Indiana, USA, August 1996-June 1997.
- Adjunct Professor, Computer Science Department, ITESM Campus Edo. de México, August–November 1997.
- Visiting Professor, Masters Program in Computer Science, Universidad Autónoma Metropolitana, Unidad Azcapotzalco, México, D. F., México, October 1997–February 1998.
- *Senior Research Fellow*, Engineering Design Centre, University of Plymouth, Plymouth, Devon, UK, February–September 1998.
- Researcher, LANIA, Xalapa, Veracruz, México, November 1998–December 2000.
- Investigador CINVESTAV 3B (Assistant Professor), CINVESTAV-IPN, Departamento de Ingeniería Eléctrica, Sección de Computación, January 2001–March 2004.
- Investigador CINVESTAV 3D (Associate Professor), CINVESTAV-IPN, Departamento de Ingeniería Eléctrica, Sección de Computación, April 2005–March 2009.
- Investigador CINVESTAV 3E (Professor), CINVESTAV-IPN, Departamento de Computación, April 2009–March 2010.
- Investigador CINVESTAV 3F (Professor with distinction),<sup>1</sup> CINVESTAV-IPN, April 2010–date.
- Chair of the Computer Science Department at CINVESTAV-IPN, August 2006-August 2014.
- Adjunct Director for the Computer Science Area of the Unité Mixte Internationale (UMI) LAFMIA 3175 CNRS, located at CINVESTAV-IPN, 2008–date.

## Consultancy

1. Technical consultant for the Mexican Consulate in New Orleans, Louisiana, USA, from November 1992 to April 1995.
2. Member of the *Scientific Advisory Board* of the company *SolveIT Software*, Australia, since 2005.
3. External consultant of the project “Industrial Innovation by Multiobjective Design Exploration”, developed by the *Japan Aerospace Exploration Agency* (JAXA), 2012-2016.
4. *International Advisor* of the *Memetic Computing Lab* (McLab) at the *School of Computer Science* of the *China University of Geosciences*, Wuhan, China, 2014–date.
5. *Scientific Advisor* of the company *Complexica*, Adelaide, Australia, 2015–date.

## Invited Talks

1. Invited speaker at the *Third International Symposium on Computing in Science and Engineering (ISCSE 2013)*, Izmir, Turkey, 24-25 October, 2013.
2. Invited speaker at the *Tenth International Conference on Evolutionary and Deterministic Methods for Design, Optimization and Control with Applications to Industrial and Societal Problems (EUROGEN 2013)*, La Palma de Gran Canaria, Spain, 7-9 October, 2013.
3. Plenary speaker during the *Third International Conference on Swarm Intelligence (ICSI'2012)*, Shenzhen, China, 17–20 June, 2012.
4. Keynote speaker at the *International Conference on Swarm Evolutionary and Memetic Computing (SEMCCO 2011)*, Visakhapatnam, India, 19-21 December, 2011.
5. Invited speaker (under the *Distinguished Visitor Program* of the *IEEE Computer Society*) at the Universidad del Valle, La Paz, Bolivia, 6 September 2011.
6. Keynote speaker at the *XVIII International Congress of Electronic, Electrical and Systems Engineering (INTERCON 2011)*, Lima, Peru, 9-12 August 2011.
7. Plenary speaker during the *2010 Online Conference on Soft Computing in Industrial Applications*, 15-27 November, 2010.
8. Keynote speaker at the *Inverse Problems, Design and Optimization Symposium, IPDO-2010*, João Pessoa, Brasil, 25-27 August, 2010.

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<sup>1</sup> *Investigador CINVESTAV 3F* is the highest possible category at CINVESTAV-IPN and is an honorary category for which evidence of high international impact is required. There are no more than 30 researchers (out of 656) at CINVESTAV-IPN who are 3F. Dr. Coello is the only 3F within the “Technology” division of CINVESTAV-IPN which currently has over 200 researchers.

9. Keynote speaker at the *International Conference on Computer Science, Communication & Information Technology*, Nanded, India, 9–11 January, 2010.
10. Invited speaker at the *Multiobjective Optimisation Workshop*, organized by *CSIRO Energy Technology*, Newcastle, Australia, September 2009.
11. Plenary speaker at the *9th International Conference on Intelligent Systems Design and Applications (ISDA'09)*, Pisa, Italy, November–December, 2009.
12. Invited speaker at the *2nd International Seminar on New Issues in Artificial Intelligence*, University Carlos III of Madrid, Colmenarejo, Spain, February, 2009.
13. Plenary speaker at the *VI IEEE Latin-American Summer School on Computational Intelligence*, Santiago, Chile, December, 2008.
14. Plenary speaker at the *International Conference on Neural Network and Genetic Algorithm in Materials Science and Engineering*, Kolkata, India, 9–11 January, 2008.
15. Invited speaker at the *2006 Congress on Evolutionary Computation (CEC'2006)*, Vancouver, Canada, 16–21 July, 2006.
16. Keynote speaker at the *XIII Latinamerican Conference on Operations Research (CLAIO)*, Montevideo, Uruguay, 27–30 November 2006.
17. Invited speaker at the *2006 IEEE Congress on Evolutionary Computation*, Vancouver, Canada, 21–26 July, 2006.
18. Keynote speaker at the *Seventh International Conference on Adaptive Computing in Design and Manufacture*, 25–27 April, 2006.
19. Invited speaker at the *International Seminar on Computational Intelligence 2005*, Mexico City, Mexico, 17–18 October, 2005.
20. Keynote speaker at the *XI ELAVIO (XI Latin American Summer Workshop on Operations Research)*, Villa de Leyva, Colombia, 25–29 July, 2005.
21. Keynote speaker at the *Fifth International Conference on Hybrid Intelligent Systems (HIS'2005)*, Rio de Janeiro, Brazil, 6–9 November 2005.
22. Keynote speaker at the *8th Joint Conference on Information Sciences (JCIS'2005)*, Salt Lake, Utah, USA, 21–26 July, 2005.
23. Keynote speaker at the *International Workshop on Biometric Technologies (BT'2004)*, Calgary, Canada, 22–23 June, 2004.
24. Keynote speaker at the *First Spanish Conference on Evolutionary and Bio-inspired Algorithms*, Mérida, Spain, February 2002.
25. Keynote speaker at the *11th IEEE International Conference on Networking, Sensing and Control (ICNSC14)*, Miami, Florida, USA, 7-9 April, 2014.
26. Plenary speaker at the *2015 IEEE Congress on Evolutionary Computation (CEC'2015)*, Sendai, Japan, 25-28 May, 2015.
27. Keynote speaker at the international conference *Evolve 2015*, Iași, Romania, 18-24 June, 2015.
28. Invited speaker at the *IEEE CIS 2015 Summer School on Multi-Objective Optimization and Decision Making* Hefei, China, 6-8 July, 2015.
29. Keynote speaker, at the *2nd Latin American Congress on Computational Intelligence & 12o Congresso Brasileiro de Inteligência Computacional (LA-CCI & CBIC 2015)*, Curitiba, Brazil, 14-16 October, 2015.
30. Invited speaker at the *Ezra's Round Table Seminar* of the Systems Engineering Program, at the College of Engineering of Cornell University, Ithaca, New York, October 30, 2015.
31. Plenary speaker at the *10th International Workshop on Hybrid Metaheuristics (HM 2016)*, Plymouth, UK, 8-10 June, 2016.
32. Keynote speaker at the *International IOSO Users Conference*, Moscow, Russia, 10-13 de July, 2016.
33. Keynoter speaker at the *2016 Symposium on Search-Based Software Engineering (SSBSE'2016)*, Raleigh, North Carolina, USA, 8-10 October, 2016.
34. Keynote speaker at the *2017 AI Hunan Summit Forum*, Changhsa, China, 29-30 June, 2017.
35. Keynote speaker at the *30<sup>th</sup> Australasian Joint Conference on Artificial Intelligence (AI'17)*, Melbourne, Australia, 19-20 August, 2017.
36. Invited speaker at the *6th International Conference on the Theory and Practice of Natural Computing (TPNC'2017)*, Prague, Czech Republic, December 18-20, 2017.

## External Reviewer of Grant Proposals

1. External evaluator of grant proposals for the *Fonds zur förderung der Wissenschaftlichen Forschung*, Austria, 2001.
2. External evaluator of grant proposals for the *Basic Research Grant Programme*, Ireland, 2002.
3. External evaluator of grant proposals for the *Council of Physical Sciences of the Netherlands Organization for Scientific Research (NWO)*, Netherlands, 2005.
4. External evaluator of grant proposals for the *Swiss National Science Foundation*, Switzerland, 2005.
5. External evaluator of grant proposals for the *Comisión Nacional de Investigación Científica y Tecnológica*, Chile, 2006.
6. External evaluator of grant proposals for the *European Research Council*, which is located in Brussels, Belgium, for the period 2009-2013.
7. In-Site external evaluator of a research project funded with \$699,189 euros. This project was sponsored by *Science Foundation Ireland*, and was located at the *University of Limerick*, Ireland, 2009.
8. External evaluator of grant proposals for the *Natural Sciences and Engineering Research Council of Canada (NSERC)*, Canada, 2011.
9. External evaluator of grant proposals for the *Engineering and Physical Sciences Research Council (EPSRC)*, England, 2012.
10. External evaluator of grant proposals for the *Portuguese Foundation for Science and Technology*, Portugal, 2012.
11. External evaluator of grant proposals for the *Marsden Fund Council / Royal Society of New Zealand*, New Zealand, 2012 and 2016.
12. External evaluator of grant proposals for *COST - European Cooperation in Science and Technology*, Brussels, Belgium, 2013.
13. External evaluator of grant proposals for the *Fonds de la Recherche Scientifique - FNRS*, Belgium, 2013.
14. External evaluator of grant proposals for the *Israel Science Foundation*, Israel, 2013.
15. External evaluator of grant proposals for the *Austrian Science Fund (FWF)*, Austria, 2014 and 2015.

## Awards

1. **2016 Third World Academy of Sciences (TWAS) Award in Engineering Sciences** for “pioneering contributions to the development of new algorithms based on bio-inspired metaheuristics for solving single- and multi-objective optimization problems.” The award will be delivered during 2018 at the General Meeting of the Third World Academy of Sciences.
2. **Best Paper Award** from the *Evolutionary Multiobjective Optimization track* at the *2016 Genetic and Evolutionary Computation Conference (GECCO'2016)*, held in Denver, Colorado, USA, in July, 2016.
3. **IEEE Transactions on Evolutionary Computation Outstanding Paper Award for 2012 (bestowed in 2015)**. This award was granted to the paper entitled “Using the Averaged Hausdorff Distance as a Performance Measure in Evolutionary Multi-Objective Optimization”, which was co-authored by Xavier Esquivel, Adriana Lara López and Oliver Schütze. The award was delivered by the President of the IEEE Computational Intelligence Society at the *2015 IEEE Congress on Evolutionary Computation*, in May, 2015. The award consists of a diploma and a check for \$1,000 US dollars.
4. **2013 IEEE Kiyo Tomiyasu Award** “for pioneering contributions to single- and multiobjective optimization techniques using bioinspired metaheuristics.” The award was delivered by the President-elect 2014 of the IEEE, and consisted of a bronze medal, a diploma and a check for \$10,000 US dollars. This is one of the prestigious *IEEE Technical Field Awards* (the most important awards granted by the Institute of Electrical and Electronics Engineers (IEEE)). Dr. Coello is the first Latinamerican researcher to receive this award, since its inception in 2001.
5. **IEEE Transactions on Evolutionary Computation Outstanding Paper Award for 2010 (bestowed in 2013)**. This award was granted to the paper entitled “HCS: A New Local Search Strategy for Multiobjective Evolutionary Algorithms”, which was co-authored by Adriana Lara López, Oliver Schütze and Gustavo Sánchez. This is the first time that Latin American authors receive this important award, granted to the best paper published in the *IEEE Transactions on Evolutionary Computation* during the year 2010. The award was delivered by the Editor-in-Chief of the *IEEE Transactions on Evolutionary Computation* during the *2013 IEEE Congress on Evolutionary Computation*, at the awards banquet which took place on June 22nd, 2013 in Cancún, México. The award consisted of a diploma and a check for \$1,000 US dollars.
6. **National Award to the Socio-Humanistic, Scientific and Technological Research UASLP 2012**, granted by the Universidad Autónoma de San Luis Potosí, México. This award was delivered on December 11th, 2012 by the Dean of the Universidad Autónoma de San Luis Potosí in a ceremony held at Centro Cultural Universitario Bicentenario of the Universidad Autónoma de San Luis Potosí. The award consisted of a diploma, a silver medal and a check for \$120,000 Mexican pesos.

7. **2012 National Medal of Science and Arts** in the area of *Physical, Mathematical and Natural Sciences*. This is the most important award that a mexican scientist can obtain in his/her country, and is granted by the Presidency of Mexico. The award consisted of a diploma, a gold medal and a check for \$650,000 Mexican pesos and was delivered by the President of Mexico, Felipe Calderón Hinojosa in November, 2012. This was only the second time in which a computer scientist received this award, since its inception, in 1945, and Dr. Coello is the first to obtain it in “exact sciences”.
8. **Scopus Award Mexico 2012 in Engineering**. This award was granted by *Elsevier* and the *Mexican Council for Science and Technology* for having the highest number of publications and citationtions in the area, in the last 5 years. Dr. Coello is the first mexican computer scientist to receive this award, since its inception, in 2007. The award consisted of a diploma and a sculpture.
9. **Ciudad Capital: Heberto Castillo 2011 Award in Basic Science** in the category of scientists who are 45 years old or less. This award is granted by the government of Mexico City upon the recommendation of the Institute of Science and Tecnology of Mexico City. The award consisted of a silver medal and a check for \$200,000 Mexican pesos. The award was delivered by the Major of Mexico City, Marcelo Ebrard Casaubón in November, 2011.
10. **Outstanding chapter award**, granted by the editorial board of the book entitled *Handbook of Swarm Intelligence-Concepts, Principles and Application*, published by *Springer* in January 2011. The award consisted of a check for \$100 US dollars.
11. **IEEE Fellow** (since January 2011) for “contributions to multi-objective optimization and constraint-handling techniques”. Dr. Coello is one of the few (less than 10) experts in evolutionary computation in the world who are IEEE Fellows.
12. **Medal to the Scientific Merit**, granted by the *Asamblea Legislativa del Distrito Federal* (Mexico City’s congressmen). The award consists of a diploma and a gold medal and it was delivered in October, 2010.
13. **2007 National Research Award** in the area of *exact sciences*. This award is granted by the Mexican Academy of Science to researchers under the age of 40 who have shown an outstanding performance, and is the most prestigious scientific award granted in Mexico to young scientists. The award consisted of a diploma and a check for \$50,000 Mexican pesos and was delivered by the President of Mexico, Felipe Calderón Hinojosa in October, 2007. Dr. Coello is the only computer scientist who has received this award, since its inception, in 1961.
14. **Best Paper Award** at the international conference *Artificial Evolution 2009 (EA’ 2009)*, held in Strasbourg, France in October, 2009.
15. **Best Paper Award** from the *Evolutionary Multiobjective Optimization track* at the *2008 Genetic and Evolutionary Computation Conference (GECCO’2008)*, held in Atlanta, Georgia, USA, in July, 2008.
16. **Best Paper Award** from the *Evolutionary Multiobjective Optimization track* at the *2007 Genetic and Evolutionary Computation Conference (GECCO’2007)*, held in London, UK, in July, 2007.
17. **Best Paper Award** in the category “Novel Smart Engineering System Design Award” at the international conference *Artificial Neural Networks in Engineering (ANNIE’2001)*, held in St. Louis, Missouri, USA, in November 2001.
18. Full scholarship (tuition and board) from the Secretaría de Educación Pública (Mexican’s Ministry of Education) to pursue MSc and PhD studies in Computer Science at *Tulane University*, New Orleans, Louisiana, USA, 1991–1996.
19. Presidential Award Medal *Diario de México* for being one of the best undergraduate students of Mexico, 1990. The award consisted of a medal.

## Impact

- Dr. Coello has had 6 of his papers in the *Hot Papers List* of the *ISI Web of Science* for being the most highly cited in the last 10 years. Some of the algorithms developed by Dr. Coello have been discussed in detail by other authors in monographs, PhD theses and conference papers.
- According to his record in *Google Scholar*<sup>2</sup>, the total number of citationtions to the publications of Dr. Coello is **39,627**, although this figure includes self-citations and citations to unpublished manuscripts and to proceedings and books that he has edited. According to *Scopus*, he has **14,483** citations, excluding self-citations and citations from his co-authors. According to the *ISI Web of Science*, he has **9,056** citations, excluding self-citations.
- His **h-index** is of **78**, according to *Publish or Perish*, **52** according to *Scopus* and **43** according to the *ISI Web of Science* (as of March 2018).

<sup>2</sup>See: <http://scholar.google.com/citationtions?user=oJMnjNYAAAAJ&hl=en>

## Professional Societies

- Member of the *Council of Authors* of SIGEVO (formerly known as the *International Society for Genetic and Evolutionary Computation*), since 2003.
- Member of *Sigma Xi, The Scientific Research Society*, 2004–date.
- Member of the Advisory Board of the *Hispanic-American Fuzzy Systems Association* (HAFSA), 2004–date.
- Member of the Mexican Academy of Science (since 2002).
- Member of the Advisory Board of Science and Technology of CONACyT (the mexican equivalent of the *National Science Foundation*), 2000-2002.
- National Researcher Level **3** (National System of Researchers), since 2005. Level 3 is the highest possible. There are only 15 computer scientists in Mexico with this level. From them, Dr. Coello is the only one who has received this distinction under the age of 40.
- Member of “Upsilon Pi Epsilon” (UPE).
- Member of the “Association for Computing Machinery” (ACM).