Martine Ceberio

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Chronology of Education

Ph.D. in Computer Science – 2003, , *University of Nantes, France*
"Contributions to numerical under and over-constrained CSPs: Symbolic Tools and Flexible Constraints". Advisors: Frédéric Benhamou and Laurent Granvilliers

D.E.A. in Computer Science – 1999, , *University of Nantes, France.* (D.E.A.: Diplôme d'Études Approfondies / Degree of Post-Graduate Advanced Studies)

M.S. in Mathematics – 1997, , *University of Nantes, France*

B.S. in Mathematics – 1995, , *University of Poitiers, France*

Employment

June 2018 – **Faculty in Residence**, *Google, Mountain View, CA*

2012 – Present – **Associate Professor of Computer Science**, *University of Texas at El Paso*

2004 – 2012 – **Assistant Professor of Computer Science**, *University of Texas at El Paso*

2003 – 2004 – **Visiting Assistant Professor of Computer Science**, *University of Texas at El Paso*

1999 – 2003 – **Student instructor and Research Assistant in Computer Science** *University of Nantes, France*

Honors and Awards since 2012

- Faculty Marshall of the College of Engineering – Spring 2019 Commencement
- UTEP EDGE Faculty Fellow, January 2018 – Present
  The UTEP EDGE program is grounded on recognizing that students enter UTEP with many talents, great strengths, and big dreams. The UTEP Edge develops these assets through a variety of high-impact experiences made possible by the expertise and dedication of our faculty, staff, alumni, and community partners.
- Invited Plenary Speaker at the 17th International Symposium on Scientific Computing, Computer Arithmetics and Verified Numerics, Sweden, September 2016
- Faculty Co-author of Outstanding Paper Award. Joint Annual Conference of the North American Fuzzy Information processing Society NAFIPS'2015 and 5th World Conference on Soft Computing, August 2015
- Faculty Marshall of the College of Engineering – Spring 2012 Commencement

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Publications since 2012

□ Chapters in Scholarly Books and Monographs

Ch17 Stefano Bistarelli, Martine Ceberio, Joel Henderson, Francisco Santini, Luciana Garbayo, "Abstract Argumentation Frameworks to Promote Fairness and Rationality in Multi-Experts Multi-Criteria Decision Making", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, pp. 7–20, 2017.

Ch16 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Optimizing pred(25) Is NP-Hard", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 33-38.

Ch15 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Constraint Approach to Multi-Objective Optimization", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 21-26.

Ch14 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "From Global to Local Constraints: A Constructive Version of Bloch's Principle", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 27-32.

Ch13 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Range Estimation under Constraints is Computable Unless There Is a Discontinuity", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 39-44.

Ch12 Juan Carlos Figueroa Garcia, Martine Ceberio, and Vladik Kreinovich, "Algebraic Product is the Only t-Norm for Which Optimization Under Fuzzy Constraints is Scale-Invariant", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 51-54.

Ch11 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Towards a Physically Meaningful Definition of Computable Discontinuous and Multi-Valued Functions (Constraints)", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 45-50.

Ch10 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Peak-End Rule: A Utility-Based Explanation", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making: Theory and Applications**, Springer Verlag, Berlin, Heidelberg, 2018, pp. 101-106.

Ch9 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Simplicity Is Worse Than Theft: A Constraint-Based Explanation of a Seemingly Counter-Intuitive Russian Saying", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 9-14.

Ch8 Martine Ceberio and Vladik Kreinovich, "Continuous If-Then Statements Are Computable", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 15-18.

Ch7 Aline Jaimes, Craig Tweedie, Tanja Magoc, Vladik Kreinovich, and Martine Ceberio, "Selecting the Best Location for a Meteorological Tower: A Case Study of Multi-Objective Constraint Optimization", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 61-66.

Ch6 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Why Tensors?", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 75-78.

Ch5 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Adding Constraints – A (Seemingly Counterintuitive but) Useful Heuristic in Solving Difficult Problems", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 79-84.

Ch4 Vladik Kreinovich, Juan Ferret, and Martine Ceberio, "Constraint-Related Reinterpretation of Fundamental Physical Equations Can Serve as a Built-In Regularization" In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 91-96.

Ch3 Paden Portillo, Martine Ceberio, and Vladik Kreinovich, "Towards an Efficient Bisection of Ellipsoids", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 137-142.

Ch2 Uram Anibal Sosa Aguirre, Martine Ceberio, and Vladik Kreinovich, "Why Curvature in L-Curve: Combining Soft Constraints", In: Martine Ceberio and Vladik Kreinovich (eds.), **Constraint Programming and Decision Making**, Springer Verlag, Berlin, Heidelberg, 2014, pp. 175-180.

Ch1 Christian Servin, Martine Ceberio, Aline Jaimes, Craig Tweedie, and Vladik Kreinovich, "How to Describe and Propagate Uncertainty When Processing Time Series: Metrological and Computational Challenges, with Potential Applications to Environmental Studies", In: Shyi-Ming Chen and and Witold Pedrycz (eds.), **Time Series Analysis, Modeling and Applications: A Computational Intelligence Perspective**, Springer Verlag, 2013, pp. 279-299.

☐ Refereed Journal Articles, published or accepted in Final Form

J13 Leobardo Valera, Angel Garcia, Jesus Padilla, and Martine Ceberio, "Towards Predicting the Behavior of Large Dynamic Systems, using Reduced-Order Modeling and Interval Computations". Submitted to the Journal of Granular Computing, December 2017.

J12 Martine Ceberio and Vladik Kreinovich, "Constraint Problems: Computability Is Equivalent to Continuity", **International Journal of Intelligent Technologies and Applied Statistics (IJITAS)**, 2017, Vol.10, No.2, pp.21-40.

J11 Martine Ceberio and Vladik Kreinovich, "A Modification of Backpropagation Enables Neural Networks to Learn Preferences", **Journal of Uncertain Systems**, to appear.

J10 Leobardo Valera and Martine Ceberio, "Model-Order Reduction Using Interval Constraint Solving Techniques", **Journal of Uncertain Systems**, 2017, Vol. 11, No. 2, pp. 84–103.

J9 Anthony Welte, Luc Jaulin, Martine Ceberio, and Vladik Kreinovich, "Avoiding Fake Boundaries in Set Interval Computing", **Journal of Uncertain Systems**, 2017, Vol. 11, No. 2, pp. 137-148.

J8 Anthony Welte, Luc Jaulin, Martine Ceberio, and Vladik Kreinovich, "Computability of the Avoidance Set and of the Set-Valued Identification Problem", **Journal of Uncertain Systems**, 2017, Vol. 11, No. 2, pp. 129-136.

J7 Vladik Kreinovich, Martine Ceberio, and Quentin Brefort, "In category of sets and relations, it is possible to describe functions in purely category terms", **Eurasian Mathematical Journal**, 2015, Vol. 6, No. 2, pp. 90-94.

J6 Quentin Brefort, Luc Jaulin, Martine Ceberio, and Vladik Kreinovich, "Towards Fast and Reliable Localization of an Underwater Object: An Interval Approach", **Journal of Uncertain Systems**, 2015, Vol. 9, No. 2, pp. 95-102.

J5 Karen Villaverde, Olga Kosheleva, Martine Ceberio, "Computations under Time Constraints: Algorithms Developed for Fuzzy Computations can Help". **Journal of Uncertain Systems**, 26(2), 138-145, 2013.

J4 Olga Kosheleva, Martine Ceberio, "How Accurately Should We Write on the Board? When Marking Comments on Student Papers?". **Journal of Uncertain Systems**, 6(2), 89-91, 2013.

J3 Xiaojing Wang, Martine Ceberio, Shamsnaz Virani, Angel Garcia, and Jeremy Cummins. "A Hybrid Algorithm to Extract Fuzzy Measures for Software Quality Assessment". **Journal of Uncertain Systems**, 2013.

J2 Vladik Kreinovich, Christelle Jacob, Didier Dubois, Janette Cardoso, Martine Ceberio (2012). "Failure Analysis of a Complex System Based on Partial Information about Subsystems, with Potential Applications to Aircraft Maintenance". **Journal of Applied and Computational Mathematics**, 11(2), 165-179.

J1 Aline Jaimes, Craig Tweedie, Vladik Kreinovich, and Martine Ceberio, "Scale-Invariant Approach to Multi-Criterion Optimization under Uncertainty, with Applications to Optimal Sensor Placement, in Particular, to Sensor Placement in Environmental Research", **International Journal of Reliability and Safety**, 2012, Vol. 6, No. 1-3, pp. 188-203.

☐ **Refereed Conference Proceedings (peer reviewed)**

C21 Horacio Florez, Martine Ceberio, Luis Bravo, Angel Garcia, and Leobardo Valera, "Uncertainty Quantification in Dynamic Systems with Applications to Combustion-related Problems: Analysis, Approaches, and Challenges". Submitted to AIAA Propulsion and Energy Forum and Exposition, Cincinnati, July 2018.

C20 Leobardo Valera, Angel Garcia, Jesus Padilla, Martine Ceberio, and Luis Bravo, "Handling Uncertainty in the Finite Element Method Using Interval Constraint Solving Techniques". To be published in the proceedings of the European Safety and Reliability Conference (ESREL 2018), Norway, June 2018.

C19 Leobardo Valera, Angel Garcia, Afshin Gholamy, and Martine Ceberio, "Towards Predictions of Large Dynamic Systems' Behavior using Reduced-Order Modeling and Interval Computations", to be published in the proceedings of the **IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2017)**.

C18 Leobardo Valera, Angel Garcia, and Martine Ceberio, "On-the-Fly Parameter Identification for Dynamic Systems Control, Using Interval Computations and Reduced-Order Modeling". To be published in the proceedings of the **North American Fuzzy Information Processing Society Annual Conference 2017 (NAFIPS 2017)**.

C17 Anthony Welte, Luc Jaulin, Martine Ceberio, and Vladik Kreinovich, "Robust Data Processing in the Presence of Uncertainty and Outliers: Case of Localization Problems", In the Proceedings of the **IEEE Series of Symposia in Computational Intelligence SSCI'2016**, Athens, Greece, December 6-9, 2016.

C16 Leobardo Valera, Martine Ceberio, "Using Interval Constraint Solving Techniques to Better Understand and Predict Future Behaviors of Dynamic Problems". In the proceedings of the **North American Fuzzy Information Processing Society Annual Conference**, NAFIPS'2016.

C15 Angel F. Garcia Contreras, Martine ceberio, "Comparison of Strategies for Solving Global Optimization Problems Using Speculation and Interval Computations". In the proceedings of the **North American Fuzzy Information Processing Society Annual Conference**, NAFIPS'2016.

C14 Horacio Florez and Martine Ceberio (2016). "A Novel Mesh Generation Algorithm for Field-Level Coupled Flow and Geomechanics Simulations". In the Proceedings of **ARMA 16-305, 50th US Rock Mechanics / Geomechanics** Symposium held in Houston, TX.

C13 Stefano Bistarelli, Martine Ceberio, Joel Henderson, Francesco Santini, "Using Argumentation Frameworks to promote Fairness and Rationality in Multi-Experts Multi-Criteria Decision Making", in the Proceedings of the **2015 Italian Conference in Theoretical Computer Science**, 2015.

C12 Esquinca, A., Villa, E. Y., Hampton, E. M., Ceberio, M. C., Wandermurem, L. S., (2015). "Latinas' resilience and persistence in computer science and engineering: Pre-

liminary findings of a qualitative study examining identity and agency." Proceedings of the 2015 **Frontiers in Education**.

C11 Martine Ceberio, Vladik Kreinovich, Hung T. Nguyen, Songsak Sriboonchitta, and Rujira Ouncharoen, "What is the Right Context for an Engineering Problem: Finding Such a Context is NP-Hard", Proceedings of the **IEEE Symposium Series on Computational Intelligence**, Cape Town, South Africa, December 7-10, 2015, pp. 1615-1620.

C10 Salem Benferhat, Karim Tabia, Sylvain Lagrue, Vladik Kreinovich, and Martine Ceberio, "On the Normalization of Interval-Based Possibility Distributions", Proceedings of the **Twenty-Eighth International Florida Artificial Intelligence Research Society Conference FLAIRS'28**, Hollywood, Florida, May 18-20, 2015, pp. 20-25.

C9 Quentin Brefort, Luc Jaulin, Martine Ceberio, and Vladik Kreinovich, "If We Take Into Account that Constraints Are Soft, Then Processing Constraints Becomes Algorithmically Solvable", Proceedings of the **IEEE Symposium on Computational Intelligence for Engineering Solutions** CIES'2014, Orlando, Florida, December 9-12, 2014, pp. 1-10.

C8 Martine Ceberio, Leobardo Valera, Olga Kosheleva, and Rodrigo Romero. "Model Reduction: Why It Is Possible and How It Can Potentially Help to Control Swarms of Unmanned Arial Vehicles". In the Proceedings of the **North American Fuzzy Information Processing Society Annual Conference**, NAFIPS'2015.

C7 Brefort, Q., Jaulin, L., Ceberio, M. C., Kreinovich, V. Y., (2014). "If We Take Into Account that Constraints Are Soft, Then Processing Constraints Becomes Algorithmically Solvable". (pp. 1-10). Proceedings of the **IEEE Symposium on Computational Intelligence for Engineering Solutions**, Orlando, Florida SSCI'2014, December 9-12, 2014.

C6 Miguel Argaez, Miguel Hernandez, Leticia Velazquez, Martine Ceberio, Reinaldo Sanchez-Arias, "Reduced-Order Modeling Using Orthogonal Wavelets", in the proceedings of **IFORS Barcelona 2014**.

C5 Paula A. Gonzalez-Parra, Martine Ceberio, Sunmi Lee, Carlos Castillo-Chavez. "Optimal Control for a Discrete Time Influenza Model". In the proceedings of the **Second Colombian Congress of Computational Biology and Bioinformatics (CCBCOL 2013)**.

C4 X. Wang, M. Ceberio, A. Garcia. "Towards Fuzzy Method for Estimating Prediction Accuracy for Discrete Inputs, with Application to Predicting At-Risk Students". Proceedings of the **Annual Conference of North American Fuzzy Information Processing Society (NAFIPS'2013)**, Alberta, Canada, June 2013.

C3 X. Wang, M. Ceberio, S. Virani, C. Del Hoyo, and L. Gutierrez. "Fuzzy measure extraction for software quality assessment as a multi-criteria decision-making problem". Proceedings of the **2012 International Conference on Software Engineering Research and Practice**, Las Vegas, NV, July 2012.

C2 X. Wang, A. F. Garcia Contreras, M. Ceberio, C. Del Hoyo, L. C. Gutierrez, and S. Virani. "Interval-based algorithms to extract fuzzy measures for software quality assessment". Proceedings of the **Annual Conference of North American Fuzzy Information Processing Society (NAFIPS'2012)**, Berkeley, CA, August 2012.

C1 Xiaojing Wang, Angel Garcia Contreras, Martine Ceberio, Christian Del Hoyo, Luis Gutierrez, "A Speculative Algorithm to Extract Fuzzy Measures from Sample Data",

Proceedings of the **2012 annual international conference of Fuzz-IEEE (Fuzz-IEEE'12)**.

☐ Refereed Workshop Proceedings (peer reviewed)

W2 Leobardo Valera, Martine Ceberio, "Model-Order Reduction Using Interval Constraint Solving Techniques." Proceedings of the **7th International Workshop on Reliable Engineering Computing (REC2016)**. June 15-17, 2016, Ruhr University Bochum, Germany.

W1 Luis Gutierrez, Martine Ceberio, Vladik Kreinovich, Rebekah L. Gruver, Marianna Pena, Matthew J. Rister, Abraham Saldana, John Vasquez, Janelle Ybarra, and Salem Benferhat, "From Interval-Valued Probabilities to Interval-Valued Possibilities: Case Studies of Interval Computation under Constraints", Proceedings of the **6th International Workshop on Reliable Engineering Computing REC'2014**, Chicago, Illinois, May 25-28, 2014.

☐ Conference / Workshop Abstracts (peer-reviewed)

A27 Angel F. Garcia Contreras, Martine Ceberio, and Vladik Kreinovich, "Plans Are Worthless but Planning Is Everything: A Theoretical Explanation of Eisenhower's Observation", in the Proceedings of the **10th International Workshop on Constraint Programming and Decision Making CoProd'2017**, El Paso, Texas, November 3, 2017, to appear.

A26 Angel F. Garcia Contreras, Martine Ceberio, and Vladik Kreinovich, "Why Convex Optimization Is Ubiquitous and Why Pessimism Is Widely Spread", Proceedings of the **10th International Workshop on Constraint Programming and Decision Making CoProd'2017**, El Paso, Texas, November 3, 2017, to appear.

A25 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Attraction-Repulsion Forces Between Biological Cells: A Theoretical Explanation of Empirical Formulas", Proceedings of the **10th International Workshop on Constraint Programming and Decision Making CoProd'2017**, El Paso, Texas, November 3, 2017, to appear.

A24 Leobardo Valera, Martine Ceberio, "Introduction to Pairwise Testing. Definition and Examples". **47th Southeastern International Conference on Combinatorics, Graph Theory Computing** (2016).

A23 Leobardo Valera, Martine Ceberio, "Interval Constraint Solving Techniques and Model-Order Reduction to Enhance the Solution of Dynamic Systems". **2016 INFORMS Annual Meeting**.

A22 Chitta Baral, Martine Ceberio, and Vladik Kreinovich, "How Neural Networks (NN) Can (Hopefully) Learn Faster by Taking Into Account Known Constraints", Proceedings of the Ninth International **Workshop on Constraints Programming and Decision Making** CoProd'2016, Uppsala, Sweden, September 25, 2016.

A21 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "When We Know the Number of Local Maxima, Then We Can Compute All of Them", Proceedings of the **Ninth International Workshop on Constraints Programming and Decision Making** CoProd'2016, Uppsala, Sweden, September 25, 2016.

A20 Martine Ceberio, Vladik Kreinovich, (2016). Preface to the special issue on uncertainty. (vol. 10). Journal of Uncertain Systems.

A19 Ceberio, M. C., Kreinovich, V. Y., Nguyen, H. T., Sriboonchitta, S., Ouncharoen, R., (2015). "What is the Right Context for an Engineering Problem: Finding Such a Context is NP-Hard". (pp. 136). Abstracts of the **IEEE Symposium Series on Computational Intelligence**, Cape Town, South Africa, December 7-10, 2015.

A18 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Optimizing pred(25) Is NP-Hard", Proceedings of the **Eighth International Workshop on Constraints Programming and Decision Making** CoProd'2015, El Paso, Texas, November 6, 2015.

A17 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Constraint Approach to Multi-Objective Optimization", Proceedings of the **Eighth International Workshop on Constraints Programming and Decision Making** CoProd'2015, El Paso, Texas, November 6, 2015.

A16 Leobardo Valera, Martine Ceberio, "Using Interval Constraint Solving Techniques in Dynamic Systems Behavior Prediction". 8th International **Workshop on Constraint Programming and Decision Making**, El Paso, Nov. 2015.

A15 Martine Ceberio, Miguel Argaez, Luis Gutierrez, Leobardo Valera. "Using Interval Constraint Solving Techniques to Solve Dynamical Systems". **CORS/INFORMS 2015 Meeting**, Montreal, June 2015.

A14 Miguel Argaez, Martine Ceberio, Leobardo Valera. "A Model Order Reduction for Solving Large-Scale Square Nonlinear Systems of Equations". **CORS/INFORMS 2015 Meeting**, Montreal, June 2015.

A13 Leobardo Valera, Martine Ceberio. "Using Regularization to Improve the Rate of Convergence in a Model-Order Reduction (MOR) Problem". **22th International Symposium on Mathematical Programming**. Pittsburg, Pennsylvania, ISMP'2015, July 2015.

A12 Martine Ceberio, Vladik Kreinovich, (2014). Preface to "Constraint Programming and Decision Making" in Constraint Programming and Decision Making. (pp. v-x). Berlin, Heidelberg: Springer Verlag.

A11 Martine Ceberio, Vladik Kreinovich, (2014). Preface to the special issue on uncertainty. (3rd ed., vol. 8, pp. 163). Journal of Uncertain Systems.

A10 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "From Global to Local Constraints: A Constructive Version of Bloch's Principle", Proceedings of the of the **Seventh International Workshop on Constraints Programming and Decision Making, CoProd'2014**, Wuerzburg, Germany, September 21, 2014.

A9 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Range Estimation under Constraints is Computable Unless There Is a Discontinuity", Proceedings of the of the **Seventh International Workshop on Constraints Programming and Decision Making, CoProd'2014**, Wuerzburg, Germany, September 21, 2014.

A8 Juan Carlos Figueroa Garcia, Martine Ceberio, and Vladik Kreinovich, "Algebraic Product is the Only t-Norm for Which Optimization Under Fuzzy Constraints is Scale-Invariant", Proceedings of the **Sixth International Workshop on Constraints Programming and Decision Making CoProd'2013**, El Paso, Texas, November 1, 2013, pp. 8-11.

A7 Martine Ceberio, Olga Kosheleva, and Vladik Kreinovich, "Towards a Physically Meaningful Definition of Computable Discontinuous and Multi-Valued Functions (Constraints)", Proceedings of the **Sixth International Workshop on Constraints Programming and Decision Making CoProd'2013**, El Paso, Texas, November 1, 2013, pp. 22-26.

A6 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Peak-End Rule: A Utility-Based Explanation", Proceedings of the **Sixth International Workshop on Constraints Programming and Decision Making CoProd'2013**, El Paso, Texas, November 1, 2013, pp. 12-16.

A5 Paula Gonzalez-Parra, Martine Ceberio, and Carlos Castillo Chavez. "Interior-Point Methods for a Multi-Group Discrete-Time Influenza Model". Presented at the **Mathematical Congress of the Americas 2013**, August 2013.

A4 Joel Henderson, Stefano Bistarelli, Martine Ceberio (2013). "Multi-Experts Multi-Criteria Decision Making", In the Proceedings of **Numerical Computations: Theory and Algorithms International Conference**, Italy, June 2013.

A3 Martine Ceberio, Vladik Kreinovich, (2012). "Preface to the special issue". (vol. 6, pp. 83). **Journal of Uncertain Systems**.

A2 Ali Jalal-Kamali, Martine Ceberio, Vladik Kreinovich, (2012). "Constraint Optimization: From Efficient Computation of What Can Be Achieved to Efficient Computation of a Way to Achieve the Corresponding Optimum". Proceedings of the **Fifth International Workshop on Constraint Programming and Decision Making CoProD'12**, Novosibirsk, Russia, September 23, 2012.

A1 Martine Ceberio, Olga Kosheleva, Vladik Kreinovich, (2012). "Simplicity Is Worse Than Theft: A Constraint-Based Explanation of a Seemingly Counter-Intuitive Russian Saying". Proceedings of the **Fifth International Workshop on Constraint Programming and Decision Making CoProD'12**, Novosibirsk, Russia, September 23, 2012.

☐ Edited Research Books

B2 Martine Ceberio and Vladik Kreinovich (eds.), Constraint Programming and Decision Making: Theory and Applications, Springer Verlag, Berlin, Heidelberg, 2017.

B1 Martine Ceberio and Vladik Kreinovich (eds.), Constraint Programming and Decision Making, Springer Verlag, Berlin, Heidelberg, 2014.

☐ Contributed Presentations Related to Education

Ed10 Panelist at the CS4All Knowledge Forum. Panel on "Transition from Post Secondary to Industry: What do Students Need in Order to Make this Transition Successfully?". September 12-13, 2018.

Ed9 "Computer Science Opportunities for Middle and High-School Students" at the 2nd Annual Canutillo ISD Professional Development Conference, GRIT (Growth, Resilience, Innovation, Tenacity). The University of Texas at El Paso, August 15-17, 2018.

Ed8 "Computational Thinking in the Classroom" at the 2nd Annual Canutillo ISD Professional Development Conference, GRIT (Growth, Resilience, Innovation, Tenacity). The University of Texas at El Paso, August 15-17, 2018.

Ed7 "Innovative Teaching - Bilingualism and Learning Across the Disciplines", a UTEP EDGE and Center for Faculty Leadership and Development workshop, with co-presenters E. Mein and A. Esquinca – February 2018.

Ed6 Presentation to El Paso High School teachers at El Paso High School, about Computational Thinking in the Classroom, across Disciplines – Feb. 2018. Audience ≈ 100.

Ed5 Presentation at the EPISD Hour of Code event for Teachers – EPISD, Dec. 2017. Audience ≈ 60.

Ed4 Contributed presentation at the Teacher Networking Technology Conference in November 2015 in El Paso about "Computational Thinking in the Classroom". Audience: about 35 teachers from all disciplines, from K-12.

Ed3 Contributed presentation at the Teacher Networking Technology Conference in October 2014 in El Paso about "Coding your way through school". Audience: about 50 teachers from all disciplines, from K-12.

Ed2 Presentation to the Clint Independent School District about Computer Science, May 2014

Ed1 Invited speaker for a Webinar for all teachers of Ysleta School District about how they can bring computer science in their classroom and what they can do it they are CS / math teachers, March 2014

Grants and Contracts since 2012

☐ **Total Grants and Contracts since 2012**

Since 2012: Total is $4,085,714 (**$1,419,905** as PI).

- **Federal funding: $385,905** as PI and $5,517,552 for projects in which I am co-PI
- **Army funding: $999,000** as PI and $190,000 for projets in which I am co-PI
- **Industry funding: $41,000** as PI and $35,000 as co-PI.
- **University funds: $25,000** from URI and two IDRs (IDR1 & IDR2)

☐ **Federal, since 2012**

1. **NSF IUSE/PFE RED – Co-PI** *IUSE/PFE:RED: Toward a Model of Change for Preparing a New Generation for Professional Practice in Computer Science.* July 2016 – June 2021. Amount: $1,919,849.
2. **NSF Research on Gender – Co-PI** *Latinas in Computer Science and Engineering: A Qualitative.* September 15, 2012 – September 14, 2016 extended. Amount: $524,960.00.
3. **American Association for the Advancement of Science WIRC MSIs – PI** *Predicting Experts' Decisions and Disagreements using Argumentation Networks and Soft Constraints.* November 2012 – October 2013. Amount: $19,472.00.
4. **NSF CCF 0953339 – PI** *CAREER: Symbolic-Numeric Constraint-Based Solutions for Real-World Scientific Problems*, 01/2010 to 12/2016. Amount: $564,650 + additional $32,000 REU supplement (2010, 2011, 2012).

☐ **Other, since 2012**

1. **Google – PI** *Google exploreCSR: Building Pathways to Graduate School* Received in Summer 2018, Project for Fall 2018 and Spring 2019. Amount: $35,000.00.
2. **ARMY RESEARCH LABORATORY through STANFORD UNIVERSITY Army High Performance Computing Research Center– PI** *HPC Modeling and Simulation of Underbody Blast Parameter Estimation Problems*, start: January 1, 2014, end: December 31, 2017. Amount: $994,000.
3. **STEM Accelerator Fund:** *CS1 Course Redesign (cont'd).* Amount: $3,500, Spring 2018.
4. **STEM Accelerator Fund:** *CS1 Course Redesign.* Amount: $8,500, Fall 2016 & Spring 2017.
5. **Google CS Engagement Award:** Ceberio, Martine (PI). *Revamping CS1 to increase retention.* Amount: $5,000. (January 2015 – December 2015).
6. **ARMY RESEARCH LABORATORY through STANFORD UNIVERSITY Army High Performance Computing Research Center– Co-PI** *HPC Modeling and Simulation of Underbody Blast Parameter Estimation Problems*, start: April 1, 2013, end: December 31, 2013. Amount: $190,000.
7. **Raytheon – Co-PI** *Virtual Geocaching – STEM Student Software Application* Fall 2012 – Spring 2013. Amount: $36,000.00.
8. **UTEP Inter-Disciplinary Research fund – Co-PI** *Research on Identity and Participation in Science, Technology, Engineering, & Science (STEM)-IDR*, The University of Texas at El Paso, February 1, 2012 - January 31, 2013. Amount: $20,000.00.
9. **UTEP Inter-Disciplinary Research fund – Co-PI** *IDR1: Interdisciplinary Research Group on Decision Making and Judgment*, The University of Texas at El Paso, Spring 2012 – Spring 2013. Amount: $5,000.00.

Service / Outreach since 2012

Professional Service since 2012

- President of **NAFIPS**, January 2019 – December 2020 (NAFIPS is the North American Fuzzy Information Processing Society)
- President-elect of **NAFIPS**, January 2017 – December 2018 (NAFIPS is the North American Fuzzy Information Processing Society)
- Member of **IEEE Technical Committee on Soft Computing**, since March 2016: Awarded 2018 "IEEE Most Active SMC Technical Committee Award" at the SMC'2018 Award Banquet. This is the third time this TC received this award.
- Webmaster of the **community website http://www.constraintsolving.com**.
- Member of the Springer Soft Computing Journal Editorial Board (November 2011 – January 2013).
- **Conference organization and chairing of program committees**

* Co-chair and co-program chair of **NAFIPS'2016** (nafips.cs.utep.edu)
* Program and general co-chair of the **CoProD workshop series since 2008** (http://coprod.constraintsolving.com), with Vladik Kreinovich (UTEP)
* Co-chair of the **ACM SAC (Symposium on Applied Computing) Knowledge Representation and Reasoning (KRR) 2016, 2017, 2018**
* Co-program chair of **NAFIPS'2012** and **NAFIPS'2014**

– **Member of Program Committees**

* RCRA 2017 (Rappresentazione della Conoscenza e Ragionamento Automatico)
* IAE/AIE 2017 (International Conference on Industrial Engineering, Other Applications of Applied Intelligent Systems))
* FLAIRS-29 (the Florida AI Research Society)
* IJCAI'15, '13 (International Joint Conference in Artificial Intelligence).
* MICAI'13 (Mexican Conference in Artificial Intelligence).
* WSCS'13 (World Conference on Soft Computing).
* WEA'12 (Workshop on Engineering Applications).
* M-PREF'12, '13, '14, '15 (international workshop at ECAI'12 & '13– European Conference on Artificial Intelligence) & '15 at IJCAI 2015
* NAFIPS'15 special session on Interval Computations.
* Workshop on Intelligent Personalization (IP) — Joint Workshop on Constraints and Preferences for Configuration and Recommendation (CPCR) and Intelligent Techniques for Web Personalization (ITWP) at IJCAI 2015
* CSP track at SAC since 2005 until 2014
* Grace Hopper Celebration 2012 New Investigator Subcommittee Member (Fall 2011 – Summer 2012)

– **Reviewer for... (a selection of review assignments since 2012 only)**

* Conferences: including Workshops at CP, SAC (Symposium of Applied Computing) (for the CSP track), NAFIPS (North American Fuzzy Information Processing Society), ECAI (the European Conference on Artificial Intelligence), FIE (the Frontiers In Education conference), IJCAI (the International Joint Conference in Artificial Intelligence), Mexican International Conference on Artificial Intelligence (MICAI) 2011, 2012, 2013, PPAM 2013, 2015, Workshop on Engineering Applications (WEA), 2012, FLAIRS 2016, FuzzIEEE 2016, ICTCS 2014 (the Italian Conference on Theoretical Computer Science), AI*IA 2016 (the XV International Conference of the Italian Association for Artificial Intelligence), IFSA-NAFIPS 2013, FuzzIEEE 2017.
* Journals: including Reliable Computing, INFORMS Jounal on Computing, Information Sciences, Journal of Experimental and Theoretical Artificial Intelligence, the Annals of Mathematics and Artificial Intelligence, Artificial Intelligence, Special Issues of Soft Computing, Journal of Logical and Algebraic Methods in Programming, Transactions on Mathematical Software, AAAS-Science.
* Proposals: Member of NSF panels in CISE (2012, 2013, 2014, 2015, 2017, 2018).
* Others:

· Grace Hopper Conference: reviewer of 2014 scholarship applications
· DoD 2014 Star Award reviewer
· NCWIT Collegiate Award reviewer 2015, 2016
· NCWIT Educator Award reviewer 2015

– **Students**
  * External reviewer of a PhD dissertation for the Computer Science program at the University of Paris 6, France, 2017.
  * Co-Supervisor of 2 graduate student from ENSTA France (advisor: Luc Jaulin), interning in the TRACS lab at UTEP for five months from April 2014 to August 2014, and for three months in summer 2016 (TRACS is the lab on Theoretical Research driven by Applications in CS, which includes my research group CR2G: cr2g.constraintsolving.com)
  * External reviewer of a PhD dissertation for the Executive Board of the Italian Association for Logic Programming (GULP), 2012.

☐ **Professional Societies Membership**

– Member of ACM (Association for Computing Machinery)
– Member of ACM-W (ACM's committee on Women)
– Member of INFORMS
– Member of IEEE
– Member of AAAS (American Association for the Advancement of Science)
– Member of ProfessHers
– Member of Empowering Leadership

Institutional Service since 2012

☐ **Department Committees**

- Current assignments
  – **Academic advisor to undergraduate students** – about 50+ per semester
  – Member of the **Faculty Evaluation Committee** – February 2015 – **present**.
  – Member of the **CS Undergraduate Curriculum Committee** – August 2013 – **present**.
  – **Chair** of the Undergraduate Fundamentals course sequence Committee – May 2015 – **present**.
  – In charge of the **Computer Science Department's course schedule** – 2007 to Spring 2010, August 2012 to January 2017, and **Fall 2018**.
  – **CS Faculty Search committee** – Fall 2018 – Spring 2019.
  – Member of the **Computer Science Advancement of Women in Computing** committee – August 2015 – **present**
- Previous assignments

- Founder and **advisor of the ACM-W chapter at UTEP** – June. 2012 to May 2018
  As the ACM-W advisor, I have guided and supervised the ACM-W students in the following projects that were funded by NCWIT or Google:
  * NCWIT Seed Fund: in spring 2014 to develop a still existing mentoring program for CS UG students
  * Google IgniteCS program: in spring 2016, ACM-W was awarded its first Google IgniteCS project to put in place formal and informal program to teach computer science to young students at a middle school of El Paso. In spring 2017, they received their second award for a similar program at a high-school of El Paso.
  * In fall 2017, they are very active in helping with the NCWIT Aspirations in Computing program and they are working on developing and submitting a Google First project.
- Chair of the Programming Languages course Committee – August 2013 – May 2015.
- **Webmaster** of the Computer Science website – August 2011 – August 2014.
- Part of the **CS ABET preparation Committee** – September 2012 – Fall 2013
- **Chair of the 2013 CS Faculty Search Committee** – August 2012 May 2013
- **CS Faculty Search Committee** – December 2011 – Spring 2012

☐ **College Committees**

- Presenter and mentor at a University-wide (led by the College of Engineering) workshop for junior faculty on the NSF CAREER grant program – February 2018
- Member of the **Task force on Faculty Success**. March 2013 – August 2017.
- Member of a team part of the **NCWIT Extension Services** (along with Ann Gates, Miguel Velez-Reyes, Pat Nava, Gabby Gandara) who worked on **increasing the number of female students in Computing**. Fall 2012 – Summer 2014.
- Member of the **Facilitation Team For Information and Security**. September 2011 – November 2012.

☐ **University Committees**

- Current Assignments
  - Member of **COURI's Board of Advisors**: COURI is the Campus Office for Undergraduate Research Initiatives at UTEP – March 2015 – **present**.
  - Member of **UTEP's Mama PhD** group – September 2010 – **present**.
- Previous Assignments
  - Member of the **Executive Council of the Faculty Senate** as representative of UTEP's College of Engineering – September 2015 – August 2017
  - **Vice-President of the Faculty Senate**. September 2014 – August 2015.
  - Member of the **Executive Council of the Faculty Senate** – as **Secretary** (September 2012 – August 2014) as such:

    - Representative of this council on the IT standing committee of the Faculty Senate (2013-2014)
    - Representative of this council on the UGCC and Student Grievance Committee standing committee of the Faculty Senate (2014-2015)
  - Member of the **Executive committee of the Computational Sciences Program** – September 2008 – June 2015.
  - Member of the **Board of the Women's Resource Center** (now Student Resource Center) – September 2011 – August 2014.
  - Member of **UTEP's Undergraduate Curriculum Committee** (standing committee of the Faculty Senate) – September 2011 – August 2014
  - **Member of the Computational Sciences Faculty Search**. September 2013 – April 2014.
  - **Faculty Senate** member. September 2010 – August 2012.
  - **Chair of the Women's Advisory Council to the President**. Sept. 2010 – December 2012
  - Member of the **Women's Advisory Council to the President, as past chair**. Jan. 2013 – Dec. 2013
  - Member of the **Women's Advisory Council to the President**. Sept. 2006 – Dec. 2013

Local / State Outreach since 2012

Note: All of the activities listed under "Local and State Outreach" are relevant to education. Moreover, most of the these activities contribute to my goal of increasing the participation of women in computing fields.

- **Advisory Boards' membership**
  - Board of advisors of Bel-Air's T-STEM Academy (since 2017)
  - Board of advisors of Parkland's T-STEM Academy (since 2015)
  - Board of advisors of Harmony Science Academy of El Paso (since 2012)
  - Board of advisors of Eastlake High School CSE program (2015)
  - Board of advisors of Saint Patrick's Elementary and Middle School (2013 to 2017)
- **Faculty advisor** for summer research projects for high-school students (2010 through 2017)
  - Nexus program at UTEP: summer internship for high-school students in my research lab. *Notably: an unprecedented high-number of interns participated in summers 2014 and 2016: 7 female high-school students)*
- **NCWIT Aspirations in Computing Regional Affiliate Competition Coordinator**
  - Coordinator of the El Paso affiliate, fall 2015 to spring 2018
  - Coordinator of the El Paso/Las Cruces affiliate from 2011 to spring 2014
    15 schools of El Paso/Las Cruces and the wider area have participated in the competition, and over 50 young women have been honored.

- **Presentations about computer science** I regularly give presentations about computer science, at UTEP or at various schools of the El Paso area. In particular, in fall 2016 and fall 2017, I gave talks to high-school young women every day of our e-Week, reaching out to about 100 women in one week. In addition, some of my past talks include the following:
  - **Presentations to K-12 Students**
    * Presentation to El Paso High School students visiting UTEP – Feb. 2018. Audience ≈ 80.
    * Presentation to the Girls-Who-Code group from Harmony Science Middle School of El Paso – UTEP, May 2017. Audience: 8.
    * Presentation to an all-girls summer camp at Fab Lab El Paso – June 2016
    * Presentation at Harmony Science Academy of El Paso about computer science and careers (December 2014)
    * Invited speaker at the New Mexico Celebration of Women in Computing, Las Cruces, NM (November 2012).
  - **Presentations to College Students**
    * Guest speaker at the Annual banquet of UTEP's SWE student chapter
    * Presentation to doctorate students about being a professor in computer science, May 2015
- **Career Fairs/Days presenter:**
  - Harmony Science Academy: promoting Computer Science, (November 2016)
  - Girls Powered Event presenter at Eastwood High School in El Paso (October 2016)
  - Ibero Academy: Presentation about Computer Science to Kindergartdeners, 1st graders, and 2nd graders (May 2014)
  - Loretto Academy of El Paso – all-girls middle and high school (April 2011, April 2012, April 2014)
- **UTEP tours and open house events**
  - Hosted a day of Computer Science for Bel-Air High School in June 2017 (about 50 students)
  - Hosted a day of Computer Science and Engineering for Saint Patrick's Elementary School – 3rd to 5th grade – in May 2017 (about 60 students)
  - Hosted a day of Computer Science and Engineering for Saint Patrick's Middle School in December 2016 (about 80 students)
  - Hosted a day of Computer Science for Bel-Air High School in May 2016 (about 50 students)
  - Participates in UTEP's Orange and black Days, and other events such as Open houses annually
  - Regularly prepare presentation material and train my research team students to give overviews of CS to visiting students.
- **High-school classroom innovation:**
  - Computer Science and Language Learning, Loretto Academy of El Paso (Fall 2013).

- **Judge:**
  - Science Fair judge at Harmony Science Academy Middle School, El Paso, February 2017.
  - Science Fair judge at St Patrick's Elementary and Middle School, El Paso, February 2016 and 2017.
- **Other**
  - Hour of Code at St. Patrick's Elementary and Middle School (December 2016)
  - Mentornet mentor in 2012 and 2013
  - Faculty advisor of the Harmony Science Academy Alumni Association at UTEP since 2015

☐ Professional Development

The following are meetings I have attended in recent years and that contributed to my professional development (these include either training or informative meetings about grant programs).

- Summer Program: Faculty in Residence at Google, June 4-29, 2018.
- Workshop: Rethinking Engineering Education at Hispanic Institutions Workshop – March 29th - 30th, 2018, UTEP
- Workshop: Reporting and Using your Data for Curricular Improvement, organized by Dr. Toni Blum at UTEP, March 2017
- Workshop: Large Class Seminar on Peer-Led Tutoring, organized by Dr. Cidgem Siring at UTEP, December 2017
- Workshop: CRA-W Career Mentoring Workshop: Washington DC, November 2016.
- Workshop: on Teaching, by Olin College instructors, organized by UTEP STEM-Accelerator Project team, June 2016
  - Participation at this workshop led to my application to funds to help me redesign CS1. I did that in spring 2017.
- Conference: Participated in the "Networking Technology & Content Conference", El Paso, TX. (Nov. 2014 and 2015)
- Continuing Education Program, "Flipped Learning Brown Bag discussion," Center for Research in Engineering and Technology Education (CREaTE), University of Texas at El Paso. May 15, 2014.
- Conference Attendance, "CE21 Community Meeting," NSF. January 2014.
- Workshop, "Problem-Based Learning." 2013, 2014.
- Conference: Gender Summit: November 2013
- Conference: NCWIT Summer: May 2013

- Program: Leadership Development Institute at UTEP: 2012-2013
- Workshop Series: Problem-Based Learning workshops: in May 2012, May 2013, May 2014
- Workshop Series: Affinity Research Group training: in summers 2011 and 2012
- Conference: NSF CE21 Community Meeting: 2011, 2012, 2014
- Workshop CRA Career: Washington DC, 2012
- Workshop CRA-W: Atlanta, 2012