Martine Ceberio

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□ Chronology of Education

Ph.D. May 2003, *Department of Computer Science, University of Nantes, France*

Dissertation: "Contribution to numeric under and over-constrained CSPs: Symbolic Tools and

Flexible Constraints"

Advisors: Professors Frédéric Benhamou and Laurent Granvilliers

M.S. 1997, *Department of Computer Science, University of Nantes, France*

B.S. 1995, *Department of Mathematics, University of Poitiers, France*

□ Chronology of Employment

<u>August 2004 – Present</u>

Assistant Professor, *Computer Science Department, The University of Texas at El Paso, TX*

⋆ **Leaves:** 12 weeks in Summer 2007 and Spring 2009 (maternity leaves) and 6 weeks in Fall

2009 (medical leave)

⋆ **Probation period extensions:** 2-year extension (first granted in 2007, second in 2009,

both for child birth)

<u>August 2003 – August 2004</u>

Visiting Assistant Professor, *Computer Science Department, The University of Texas at*

El Paso, TX

September 1999 – May 2003

Student instructor, *Computer Science Department, University of Nantes, France*

☐ Honors and Awards

- Faculty Co-author of Best Student Paper Award (first place), NAFIPS'2011 Annual Conference, March 2011

- Faculty Marshall at UTEP's Spring 2011 Commencement

- Office of Research And Sponsored Projects Outstanding Performance Award, 2009-2010, for Outstanding Performance in Securing Extramural Funding

- NSF IMPACT Seminar Fellowship, UTEP 2006 – 2007

☐ Service / Outreach

☐ Local / State Outreach

- Summer 2011: **Faculty advisor** for two summer research projects for Early College High-School students at El Paso Community College.
- Summer 2011: **Faculty advisor** for four high-school students (3 from Da Vinci high school / 1 from Loretto Academy in El Paso) within the Nexus program at UTEP.
- April 2011: Presentation about career choices and computer science at the Young Women in Computing at New Mexico State University, Las Cruces.
- April 2011: judge at the Chapin High-School **Senior Project Symposium**.
- April 2011: **Career Fair** at Loretto Academy of El Paso (all-girls middle and high school).
- Summer 2010: **Faculty advisor** for a summer research project for Early College High-School students at El Paso Community College.
- Summer 2010: **Faculty advisor** for two high-school girls of Harmony Science Academy of El Paso, within the Nexus program at UTEP.
- April 2010: Presentation about career choices to **Early College High School Students** at El Paso Community College.
- Fall 2009, 2010: part of the **NCWIT local effort** (led by Dr. Steve Roach, UTEP) to engage high-school girls of El Paso to participate in the NCWIT Awards for Aspirations in Computing. Keynote speaker at the awards ceremony in Spring 2011 at UTEP.

- Fall 2009: Judge at the **Science Fair** of Harmony Science Academy (for elementary and middle schools), El Paso
- March 2007, 2008, 2010, 2011: **Career Expo** at Mitzi Bond Elementary School, El Paso.
- May 2008: Presentation at the **Extend Your Horizons** conference at UTEP.
- April 2008: **"Dia de los Niños"**. I helped the ACM chapter at UTEP to organize this event.
- May 2007: Presentation about Artificial Intelligence and Games at **Wiggs Middle School**, El Paso.
- I was invited in **May 2006**, by the association Proyecto Abel in **Ciudad Juarez, Mexico**, to give an invited talk to about twenty high-school students. I gave a 2-hour presentation in Spanish on the following topic: from Artificial Intelligence to Constraint Programming.

☐ **National / International Outreach**

- Member of **NAFIPS' board of directors**, since March 2011 (NAFIPS is the North American Fuzzy Information Processing Society)
- Webmaster of the **community website http://www.constraintsolving.com**.
- **Conference organization and chairing / Program committees**
  * Program and general chair of the CoProD'08,'09,'10,'11 workshops (coprod.constraint-solving.com)
  * Co-general chair and co-program chair of NAFIPS'2011 (nafips.cs.utep.edu), Co-general chair of SCAN'08, the 13th GAMM - IMACS International Symposion on Scientific Computing, Computer Arithmetic and Validated Numerics (scan2008.com)
  * Co-organizer and member of the program committee of CPAIOR'09 workshop on Bound Reduction Techniques for Constraint Programming and Mixed-Integer Nonlinear Programming (www.cs.utep.edu/mceberio/Research/br-cpaior09/)
  * Program chair of the DSCP workshop at CP'05 on Distributed and Speculative Constraint Programming
  * Co-chair of the RCA (Reliable Computing and their Applications) track at ACM SAC'05,'06 (Symposium on Applied Computing)
  * Member of the program committee of the CSP track at SAC since 2005
  * Member of the scientific committee of Virtual Concept 2005, international conference
  * Member of the scientific committee of the international conference AMCS'05 (Algorithmic Mathematics and Computer Science)
- **Students**
  * Supervised an undergraduate students from France for a project during a year at UTEP
  * Was a external reviewer for the dissertation of a PhD candidate from the Indian Institute of Technology of Bombai, India (2009)

☐ **Department Committees**

- **Chair of the CS Colloquium committee** – since Sept. 2010
- **Advisor of the ACM chapter at UTEP** – since Sept. 2005
- Member of the **CS Faculty search committee** – Sept. 2010 - May 2011
- Member of the **CS Chair search committee** – Sept. 2008 - May 2009
- Member of the **CS Graduate committee** – since Sept. 2004
- Member of the **CS Facilities committee** – since Sept. 2005
- Member of the **CS Information Assurance committee** – since Sept. 2007
- In charge of the **department's course schedule**, under the lead of Ann Gates and later on Steve Roach – 2007 - spring 2010.

☐ **College Committees**

- Member of the **Civil Engineering Faculty search committee** – Sept. 2008 - May 2009

– Member of the working group on UTEP's **Key Strategic Direction** about enhancing students' success – Dec. 2005 - April 2006.

– Member of the working group on UTEP's **Key Strategic Direction** about research – Jan. 2005 - April 2005.

– Member of **UTEP's Integrated Curriculum group** – 2004.

☐ **University Committees**

– **Chair of the Women's Advisory Council to the President** – since Sept. 2010

– Member of **UTEP's Senate** for the CS department – since Sept. 2010

– Member of the **Executive Committee** of the **Computational Sciences Program** at UTEP – since Sept. 2008

– Member of the **MamaPhD group** at UTEP – since Sept. 2010

– Member of the **Women's Advisory Council to the President** – since Sept. 2006

– Member of the **UTEP Catalog and Calendar Committee for the Senate** – Sept. 2006 - Sept. 2008

☐ **Other Committees**

• **Served as Reviewer / Referee**

– Conferences: including CP (Principles and Practice of Constraint Programming), Workshops at CP, SAC (Symposium of Applied Computing) (for the CSP track), NAFIPS (North American Fuzzy Information Processing Society), ICORR (the International Conference On Rehabilitation Robotics), ECAI (the European Conference on Artificial Intelligence), FIE (the Frontiers In Education conference), IJCAI (the International Joint Conference in Artificial Intelligence), AAAI (Annual Conference of the Association for the Advancement of Artificial Intelligence), PSI (Ershov Memorial Conference), PARA10 (State of the Art in Scientific and Parallel Computing), ICLP08 (the 24th International Conference on Logic Programming).

– Journals: including Computing, ANOR, Reliable Computing, IJAR (International Journal of Approximate Reasoning), INFORMS Jounal on Computing, Informations Science.

– Books: Applied Interval Analysis, by Luc Jaulin, 2001; Java for Everyone (class test) by Horstmann at Wiley, 2009; Data Structures: Abstraction and Design Using Java, by Koffman and Wolfgang at Wiley, 2009.

– Proposals: Member of NSF panels in Maths/Physics (2008), CISE (2008, 2011), DUE (2010, 2011).

• **Member of Professional Societies**

– Member of ACM

– Member of the Constraint Programming Society in North America

– Member of the Association for Constraint Programming

– Member of ProfessHers

– Member of Empowering Leadership

☐ **Publications / Creative Activity (Published or Accepted)**

☐ **Chapters in Scholarly Books and Monographs**

Ch1 Martine Ceberio, Vladik Kreinovich, Andrzej Pownuk, and Barnabas Bede, "From Interval Computations to Constraint-Related Set Computations: Towards Faster Estimation of Statistics and ODEs Under Interval, P-Box, and Fuzzy Uncertainty", In: JingTao Yao (ed.), **Novel Developments in Granular Computing: Applications for Advanced Human Reasoning and Soft Computation**, IGI Global Publisher, pp. 131-147, 2010.

Ch2 Tanja Magoč, François Modave, Vladik Kreinovich, and Martine Ceberio, "Risk Management in Investment Portfolios: The Use Of Fuzzy Measures, Fuzzy Integrals and Constraint Programming", Aboul-Ella Hassanien and Ajith Abraham (Eds), Foundations on Computational Intelligence, in **Studies in Computational Intelligence**, Springer Verlag, Vol. 202/2009, pp 133-173, 2009.

Ch3 Hung T. Nguyen, Vladik Kreinovich, Francois Modave, and Martine Ceberio, "Fuzzy Without Fuzzy: Why Fuzzy-Related Aggregation Techniques Are Often Better Even in Situations Without True Fuzziness", Aboul-Ella Hassanien and Ajith Abraham (Eds), Foundations of Computational Intelligence, Springer-Verlag, 2009, Vol. 2, pp. 27-51.

Ch4 Martine Ceberio and François Modave, "Interval-based Multicriteria Decision Making", in **Modern Information Processing: From Theory to Applications**, edited by B. Bouchon-Meunier, G. Coletti, R. R. Yager (Eds), Elsevier Mathematics, pp. 281–294, 2006.

Ch5 Martine Ceberio, Ken Satoh, and Hiroshi Hosobe, "Speculative Constraint Processing with Multi-Agent Belief Revision", in Francesca Toni and Paolo Torroni (Eds.), **Computational Logic in Multi-Agent Systems** – CLIMA VI (Post-Proceedings of the 6th International Workshop on Computational Logic in Multi-Agent Systems), Lecture Notes in Artificial Intelligence, Vol. 3900, pp. 340–357, Springer-Verlag, 2006.

☐ **Refereed Journal Articles, published or accepted in Final Form**

• **Refereed Journal Articles**

J1 Aline Jaimes, Craig Tweedy, Tanja Magoc, Vladik Kreinovich, and Martine Ceberio, "Selecting the Best Location for a Meteorological Tower: A Case Study of Multi-Objective Constraint Optimization", **Journal of Uncertain Systems**, 2010, Vol. 4, No. 3.

J2 Martine Ceberio and Vladik Kreinovich, "Computing with Tensors: Potential Applications of Physics-Motivated Mathematics to Computer Science", **Journal of Uncertain Systems**, 2010, Vol. 4, No. 3.

J3 Martine Ceberio and Vladik Kreinovich, "Diagonalization is also practically useful: a geometric idea", **Geombinatorics**, 2010, Vol. 20, No. 1, pp. 15-20.

J4 Omar Ochoa, Martine Ceberio, and Vladik Kreinovich, "How to Describe Spatial Resolution: An Approach Similar to the Central Limit Theorem", **Applied Mathematical Sciences**, 2010, Vol. 4, No. 63, pp. 3153-3160.

J5 Martine Ceberio, Vladik Kreinovich, Gunter Mayer, "For Complex Intervals, Exact Range Computation Is NP-Hard Even for Single Use Expressions (Even for the Product)", **Reliable Computing Journal**, 2007.

J6 Daniel Berleant, Martine Ceberio, Gang Xiang, Vladik Kreinovich, "Towards Adding Probabilities and Correlations to Interval Computations", **International Journal of Approximate Reasoning**, 2007.

J7 Gang Xiang, Martine Ceberio, Vladik Kreinovich, "Computing Population Variance and Entropy under Interval Uncertainty: Linear Time Algorithms", **Reliable Computing**, 2007.

J8 Martine Ceberio, Scott Ferson, Vladik Kreinovich, Sanjeev Chopra, Gang Xiang, Adrian Murguia, and Jorge Santillan, "How To Take Into Account Dependence Between the Inputs: From Interval Computations to Constraint-Related Set Computations, with Potential Applications to Nuclear Safety, Bio- and Geosciences", **Journal of Uncertain Systems**, 2007.

J9 Martine Ceberio, Vladik Kreinovich, Sanjeev Chopra, Luc Longpre, Hung T. Nguyen, Bertram Ludaescher, and Chitta Baral, "Interval-Type and Affine Arithmetic-Type Techniques for Handling Uncertainty in Expert Systems", **Journal of Computational and Applied Mathematics**, 2007, Vol. 199, No. 2, pp. 403–410.

J10 Scott Starks, Vladik Kreinovich, Luc Longpré, Martine Ceberio, Gang Xiang, Roberto Araiza, Jan Beck, Radhi Kandathi, A. Nayak, and Roberto Torres, "Towards Combining Probabilistic and Interval Uncertainty in Engineering Calculations: Algorithms for Computing Statistics under Interval Uncertainty, and Their Computational Complexity", **Reliable Computing**, Vol. 12, No 6, pp. 471–501, Dec. 2006.

J11 Frédéric Benhamou, Martine Ceberio, Philippe Codognet, Hiroshi Hosobe, Christophe Jermann, Ken Satoh, Kasunori Ueda, "Franco-Japanese Research Collaboration in Constraint Programming, R&D Project Report", **Progress in Informatics**, no 3, pp. 59-65, 2006.

J12 Chandra S. Pedamallu, Linet Ozdamar, Martine Ceberio, "Efficient Interval Partitioning – Local Search Collaboration for Constraint Satisfaction", **Journal on Computers and Operations Research**, 2006.

J13 Martine Ceberio and Vladik Kreinovich, "Fast Multiplication of Interval Matrices (Interval Version of Strassen's Algorithm)", **Reliable Computing**, Vol. 10, No. 3, pp. 241-243, April 2004.

J14 Martine Ceberio and Vladik Kreinovich, "Greedy Algorithms for Optimizing Multivariate Horner Schemes", in **ACM-SIGSAM Bulletin**, Vol. 38, No. 1 (147), pp. 8-15, March 2004.

J15 Martine Ceberio, Laurent Granvilliers, "Horner's Rule for Interval Evaluation Revisited", **Computing**, Vol. 69, No 1, pp. 51–81, 2002.

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

C1 Paden Portillo, Martine Ceberio, and Vladik Kreinovich, "Towards an Efficient Bisection of Ellipsoids", Proceedings of the ITEA Live-Virtual-Constructive Conference "Test and Evaluation", El Paso, Texas, January 24-27, 2011.

C2 Karen Villaverde, Olga Kosheleva, and Martine Ceberio, "Computations under Time Constraints: Algorithms Developed for Fuzzy Computations Can Help", Proceedings of

NAFIPS 2011, the North American Fuzzy Information Processing Society, 2011.

C3 Xiaojing Wang, Jeremy Cummins, and Martine Ceberio, "The Bees Algorithm to Extract Fuzzy Measures from Sample Data", *best student paper award*, Proceedings of **NAFIPS 2011, the North American Fuzzy Information Processing Society**, 2011. Best Student Paper Award (first place).

C4 Aline Jaimes, Craig Tweedie, Tanja Magoc, Vladik Kreinovich, and Martine Ceberio, "Multi-Objective Optimization under Positivity Constraints, with a Meteorological Example", Proceedings of the **IEEE World Congress on Computational Intelligence WCCI'2010**, Barcelona, Spain, July 18-23, 2010, pp. 2355-2361.

C5 Carlos Acosta and Martine Ceberio, "A Constraint-Based Approach to Verification of Programs with Floating-Point Numbers", in the Proceedings of **SERP'08 - the 2008 International Conference on Software Engineering Research and Practice**, 2008.

C6 Martine Ceberio and Christian Servin, "Cascade Vulnerability Problem Simulator Tool", in the Proceedings of **the 2008 International Conference on Modeling, Simulation and Visualization Methods, MSV'08**, pp. 227–231, 2008.

C7 Yoonsik Cheon, Antonio Cortes, Martine Ceberio, and Gary T. Leavens, "Integrating Random Testing with Constraints for Improved Efficiency and Diversity", in **the 20th International Conference on Software Engineering and Knowledge Engineering, SEKE'08**, San Francisco Bay, California, USA, July 1–3, 2008.

C8 Roberto Araiza, Martine Ceberio, Naga Suman Kanagala, Vladik Kreinovich, and Gang Xiang, "Applications of 1-D Versions of Image Referencing Techniques to Hydrology and to Patient Rehabilitation", in the proceedings of **NAFIPS 2008, the North American Fuzzy Information Processing Society**, 2008.

C9 Tanja Magoč, Martine Ceberio, and François Modave, "Interval-based Multi-Criteria Decision Making: Strategies to Order Intervals", in the proceedings of **NAFIPS 2008, the North American Fuzzy Information Processing Society**, 2008.

C10 Naga Suman Kanagala, Martine Ceberio, Thompson Sarkodie-Gyan, Vladik Kreinovich, and Roberto Araiza, "Identification of Human Gait in Neuro-Rehabilitation: Towards Efficient Algorithms", in the Proceedings of the **24th Southern Biomedical Engineering Conference**, Eds. H. Nazeran, M. Goldman, and R. Schoephoerster, Medical and Engineering Publishers, pp. 153–156, 2008.

C11 Richard D. Brower, Martine Ceberio, Patricia Nava, Thompson Sarkodie-Gyan, Huiying Yu, "Identification of Human Gait using Fuzzy Inferential Reasoning", in the Proceedings of **ICORR'07, the 10th International Conference On Rehabilitation Robotics**, Netherlands, 2007.

C12 Richard Brower, Martine Ceberio, Chad MacDonald, Thompson Sarkodie-Gyan, "Determination of Human Gait Phase Using Fuzzy Inference", in the Proceedings of **ICORR'07, the 10th International Conference On Rehabilitation Robotics**, Netherlands, 2007.

C13 Martine Ceberio, Vladik Kreinovich, Andrzej Pownuk, and Barnabas Bede, "From Interval Computations to Constraint-Related Set Computations: Towards Faster Estimation of Statistics and ODEs under Interval, p-Box, and Fuzzy Uncertainty", in the proceedings of **IFSA'07 World Congress, the International Fuzzy Systems Association** (Main theme: Theory and Applications of Fuzzy Logic and Soft Computing), 2007.

C14 Stefano Bistarelli, Martine Ceberio, Eric Freudenthal, and Christian Servin, "An Optimization Approach to the Cascade Vulnerability Problem using Soft Constraints", in the proceedings of **NAFIPS 2007, the North American Fuzzy Information Processing Society**.

C15 Michael Orshansky, Wei-Shen Wang, Martine Ceberio, Gang Xiang, "Interval-based Robust Statistical Techniques for Non-negative Convex Functions, with Application to Timing Analysis of Computer Chips", in the proceedings of **the 21st International Symposium on Applied Computing, SAC'06**, 2006.

C16 Martine Ceberio, Richard Coy, François Modave, "Multi-criteria Decision Making for Assisted Design", in the proceedings of **IPMU'06, Information Processing and Management of Uncertainty in Knowledge-based Systems**, pp. 1567–1574, 2006.

C17 Evgeny Dantsin, Alexander Wolpert, Martine Ceberio, Gang Xiang, and Vladik Kreinovich, "Detecting Outliers under Interval Uncertainty: A New Algorithm Based on Constraint Satisfaction", in the proceedings of **IPMU 2006, Information Processing and Management of Uncertainty in Knowledge-based Systems**, 2006.

C18 Olga Kosheleva and Martine Ceberio, "Processing Educational Data: From Traditional Statistical Techniques to an Appropriate Combination of Probabilistic, Interval, and Fuzzy Approaches", in the Proceedings of the **International Conference FNG'05, , Information Processing and Management of Uncertainty in Knowledge-based Systems**, 2005.

C19 Martine Ceberio, G. Randy Keller, Olga Kosheleva, Vladik Kreinovich, Roberto Araiza, M. Averill, and Gang Xiang, "Data Processing in the Presence of Interval Uncertainty and Erroneous Measurements: Practical Problems, Results, Challenges", in the Proceedings of the **Second Scandinavian Workshop on Interval Methods And Their Applications**, 2005.

C20 Martine Ceberio and Vladik Kreinovich, "Towards an Optimal Approach to Soft Constraint Problems", in the Proceedings of the **17th IMACS World Congress Scientific Computation, Applied Mathematics and Simulation (IMACS)**, 2005.

C21 Martine Ceberio, Vladik Kreinovich, Sanjeev Chopra, Bertrand Ludaescher, and Emad Saad, "Taylor Model-type Techniques for Hanlding Uncertainty in Expert Systems, with Potential Applications to Geoinformatics", in the Proceedings of the **17th IMACS World Congress Scientific Computation, Applied Mathematics and Simulation (IMACS'05)**, 2005.

C22 Martine Ceberio, Ken Satoh, and Hiroshi Hosobe, "Speculative Constraint Processing with Iterative Revision for Disjunctive Answers", in the proceedings of **CLIMA IV, Computational Logic in Multi-agent Systems**, pp.119–134, 2005.

C23 Martine Ceberio and Richard Coy, "Enhancement of Parameter Estimation using Flexible Constraints: an Application to Shock-response Study", in the Proceedings of **"Algorithmic Mathematics and Computer Science" (AMCS'05)**, 2005.

C24 François Modave, Martine Ceberio, Xiaojing Wang, Olga Garay, R. Ramirez, and R. Tejada, "Comparison of Computer Attacks: an Application of Interval-based Fuzzy Integration", in the Proceedings of **NAFIPS'05, the North American Fuzzy Information Processing Society**, 2005.

C25 Martine Ceberio, François Modave, and Xiaojing Wang, "Comparing Attacks: an Approach Based on Interval Computations and Fuzzy Integration", in the Proceedings of **FuzzIEEE'05, the IEEE International Conference on Fuzzy Systems**, 2005.

C26 P. Jaksurat, Eric Freudenthal,Martine Ceberio, and Vladik Kreinovich, "Probabilistic Approach to Trust: Ideas, Algorithms, and Simulations", in the Proceedings of the **5th International Conference on Intelligent Technologies (InTech'04)**, 2004.

C27 Martine Ceberio and François Modave, "An Interval-valued, 2-additive Choquet Integral for Multicriteria Decision Making", in the proceedings of **IPMU 2004, Information Processing and Management of Uncertainty in Knowledge-based Systems**, 2004.

C28 Martine Ceberio and François Modave, "Interval-Based Multicriteria Decision Making", in the Proceedings of **AI+MATH'04, the International Symposium on Artificial Intelligence and Mathematics**, 2004.

C29 Martine Ceberio, Laurent Granvilliers, "Solving Nonlinear Equations by Abstraction, Gaussian Elimination, and Interval Methods", in the proceedings of **FroCos 2002**, pp 117-131, 2002.

C30 Martine Ceberio, Laurent Granvilliers, "Solving Nonlinear Systems by Constraint Inversion and Interval Arithmetic", in the proceedings of **AISC 2000**, pp 127-141, 2000.

- **Refereed Workshop Proceedings (peer reviewed)**

W1 Aline Jaimes, Craig Tweedie, Tanja Magoc, Vladik Kreinovich, and Martine Ceberio, "Optimal Sensor Placement in Environmental Research: Designing a Sensor Network under Uncertainty", In: Michael Beer, Rafi L. Muhanna, and Robert L. Mullen (Eds.), Proceedings of the **4th International Workshop on Reliable Engineering Computing REC'2010**, Singapore, March 3-5, 2010, pp. 255-267.

W2 Martine Ceberio, Vladik Kreinovich, Andrzej Pownuk, "Constraint-Related Set Computations: A New FEM-Motivated Approach to Propagating Uncertainty", in the proceedings of **FEMTEC'09**.

W3 Paulo Pinheiro Da Silva, Martine Ceberio, Christian Servin, Vladik Kreinovich, "Propagation and Provenance of Probabilistic and Interval Uncertainty in Cyberinfrastructure-Related Data Processing", in the proceedings of **the NSF Workshop on Reliable Engineering Computing, REC'08**.

W4 Martine Ceberio, Scott Ferson, Vladik Kreinovich, Sanjeev Chopra, Gang Xiang, "How to Take into Account Dependence Between the Inputs: From Interval Computations to Constraint-Related Set Computations, With Potential Applications to Nuclear Safety, Bio- and Geosciences", in the proceedings of **the NSF Workshop on Reliable Engineering Computing, REC'06**, 2006.

W5 Martine Ceberio, Vladik Kreinovich, and Lev Ginzburg, "On the Use of Intervals in Scientific Computing: What is the Best Transition from Linear to Quadratic Approximation?", in the Proceedings of the **Second Scandinavian Workshop on Interval Methods And Their Applications**, 2005.

W6 Scott Starks, Vladik Kreinovich, Luc Longpré, Martine Ceberio, Gang Xiang, Roberto Araiza, Jan Beck, Rathi Kandathi, A. Nayak, and Roberto Torres, "Towards Combining Probabilistic and Interval Uncertainty in Engineering Calculations", in the proceedings of the **NSF Workshop on Reliable Engineering Computing**, pp. 193–213, 2004.

W7 Martine Ceberio, Vladik Kreinovich and Lev Ginzburg, "Towards Joint Use of Probabilities and Intervals in Scientific Computing: What is the Best Transition from Linear to Quadratic Approximation?", in the Proceedings of the **Workshop on State-of-the-Art in Scientific Computing (PARA'04)**, 2004.

- **Conference/Workshop abstracts**

  A1 Uram Anibal Sosa Aguirre, Martine Ceberio, and Vladik Kreinovich, "Why Curvature in L-Curve: Combining Soft Constraints", in the book of abstracts of **CoProD'11**, 2011.

  A2 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Adding Constraints: A (Seemingly Counterintuitive but) Useful Heuristic in Solving Difficult Problems", in the book of abstracts of **CoProD'11**, 2011.

  A3 Shubhra Datta, Martine Ceberio, Mario Bencomo, and George Moreno, "On the Practicality of Constraint-Based Program Verification", in the proceedings of **SCAN'10**, 2010.

  A4 Karen Villaverde, Olga Kosheleva, and Martine Ceberio, "Why Ellipsoid Constraints, Ellipsoid Clusters, and Riemannian Space-Time: Dvoretzky's Theorem Revisited", in the book of abstracts of **CoProD'10**, 2010.

  A5 Vladik Kreinovich, Juan Ferret, and Martine Ceberio, "Constraint-Related Reinterpretation of Fundamental Physical Equations Can Serve as a Built-In Regularization", in the book of abstracts of **CoProD'10**, 2010.

  A6 Paden Portillo, Martine Ceberio, Vladik Kreinovich, "Towards an Efficient Bisection of Ellipsoids", in the book of abstracts of **CoProD'10**, 2010.

  A7 Olga Kosheleva, Martine Ceberio, and Vladik Kreinovich, "Why Tensors?", in: Martine Ceberio (ed.), Abstracts of the **Second Workshop on Constraint Programming and Decision Making CoProD'09**, El Paso, Texas, November 9-10, 2009, pp. 20-23.

  A8 Martine Ceberio and Vladik Kreinovich, "Continuous If-Then Statements Are Computable". In: Martine Ceberio (ed.), Abstracts of the **Second Workshop on Constraint Programming and Decision Making CoProD'09**, El Paso, Texas, November 9-10, 2009, pp. 11-14.

  A9 Aline Jaimes, Craig Tweedy, 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 (ed.), Abstracts of the **Second Workshop on Constraint Programming and Decision Making CoProD'09**, El Paso, Texas, November 9-10, 2009, pp. 56-60.

  A10 Martine Ceberio, Vladik Kreinovich, Scott Ferson, Cliff Joslyn, "Adding Constraints to Situations when, in addition to Intervals, we also have Partial Information about Probabilities", in the proceedings of **SCAN'06** + published in the **post-proceedings of SCAN'06**, the GAMM - IMACS International Symposium on Scientific Computing, Computer Arithmetic and Verified Numerical Computations.

  A11 Luc Longpré, Vladik Kreinovich, Eric Freudenthal, Martine Ceberio, Francois Modave, Neelabh Baijal, Wei Chen, Vinod Chirayath, Gan Xiang, and J. Ivan Vargas, "Privacy, Protecting, Processing, and Measuring Loss", presented at the **South Central Information Security Symposium**, 2005.

  A12 Martine Ceberio, Vladik Kreinovich, Luc Longpré, Emad Saad, Bertrand Ludäscher, Chitta Baral, and Hung T. Nguyen, "Affine Arithmetic-Type Techniques for Handling Uncertainty in Expert Systems, with Applications to Geoinformatics and Computer Security", in the Proceedings of the **11th GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic, and Validated Numerics (SCAN'04)**, 2004.

☐ **Work in Progress**

- **Working Journal Papers**

  WP1 "A Hybrid Solver for Extracting Fuzzy Measures from Sample Data", by Xiaojing Wang, Jeremy Cummins, and Martine Ceberio, to be submitted to the International Journal of Fuzzy Sets and Systems

- **Other Publications**

  WP2 "Interval and Revisited Fourier-Motzkin Method for Largely Redundant Systems of Inequalities", by Mario Bencomo, Luis Carlos Gutierrez, and Martine Ceberio

☐ **Grants and Contracts**

☐ **Total Grants and Contracts**

Since September 2003,

- $ 1,276,243 in federal funding, of which $ 596,091 as PI;

- $ 8,900 from university research incentive;

- 20,000 euros from European funding, of which 5,000 euros as PI.

☐ **Federal**

1. **NSF CCF 0953339 – PI** *CAREER: Symbolic-Numeric Constraint-Based Solutions for Real-World Scientific Problems*, 01/2010 to 12/2014. Amount: $564,650 + additional $24,000 REU supplement (2010, 2011).

2. **NSF CCF 0839052 – PI** *Constraint Programming and Decision Making Workshop, Co-ProD'08*, 08/2008 – 07/2010. Amount: $7,441.

3. **NSF OCI 0506429 – co-PI** of the SCI: Collaborative Research project, called *DAPLDS, a Dynamically Adaptive Protein-Ligand Docking System based on Multi-Scale Modeling*, with Michela Taufer, Pat Teller, Aug. 2005 to Jan. 2008. Amount: $ 680,152.

☐ **Other**

1. **UTEP URI grant – PI** *A Hybrid Robust Solver for Problems with Uncertainty: HyRS*, Jan. 2009 to Dec. 2009. Amount: $ 5,400.

2. **NIH Grant 1 T36 GM078000-01 – senior personnel**: instructor in charge of the development of a bio-informatics-oriented lab for the course Introduction to Computer Science.

3. **UTEP URI grant – PI:** Jan-Dec. 2005, *Next Steps towards Flexibility in Problem-Solving.* Amount: $ 3,500.

4. **GRA Advance (Research assistantship)** for my master's student, Richard Coy, awarded in December 2004: support for 4.5 months of assistantship.

5. **Grant of the French Ministry of Research – PI:** to help expatriates establish collaborations between French researchers working abroad and French institutes. Sept. 2004 to Aug. 2006. Amount: 5,000 euros.

6. **PAI Egide Sakura:** external collaborator, French-Japanese project. Jan. 2004 to Dec. 2006. Amount: 15,000 euros.

□ **List of Collaborators (last 48 months)**

- UTEP[1]: Vladik Kreinovich, Eric Freudenthal, Luc Longpre, Olga Kosheleva, Andzrej Pownuk, Paulo Pinheiro da Silva, Yoonsik Cheon

- NMSU[2]: Karen Villaverde

- TTUHSC[3]: François Modave

- Stevens Institute of Technology in New Jersey: David Klappholz

- University of Maryland: Tanja Magoc

- Dipartimento di Scienze, Pescara, **Italy**: Stefano Bistarelli

- Yeditepe University, **Turkey**: Linet Özdamar

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[1]UTEP: The University of Texas at El Paso
[2]NMSU: New Mexico State University
[3]TTUHSC: Texas Tech University Health Sciences Center