

Curriculum Vitae

Dr. Karen Villaverde
New Mexico State University
Department of Computer Science
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Current Research Interests

- Interval computations
- Educational computer gaming

Faculty Positions at New Mexico State University

- 2007-Present. **Assistant Professor**, Computer Science Department
- 2001-2007. **College Assistant Professor**, Computer Science Department

Education

- 1998-2002. New Mexico State University, **Ph.D in Computer Science**
 - Advisor: Dr. Enrico Pontelli
 - Dissertation: *An Efficient Methodology to Exploit OR-Parallelism on Distributed Memory Systems*
- 1992-1993. University of Texas at El Paso, **Master of Science in Computer Science**, GPA: 4.0/4.0
 - Advisor: Dr. Vladik Kreinovich
 - Thesis: *Linear-Time Algorithm that Locates Local Maxima and Minima of a Function from Given Approximate Measurement Results*

- 1989-1991. University of Texas at El Paso, **Bachelor of Science in Computer Science**, GPA: 3.83/4.0

Honors, Fellowships, and Scholarships

- 2009-2011. Distinguish Member of the Teaching Academy at New Mexico State University
- 2010. Best Paper Award at the 2010 IEEE North American Fuzzy Information Processing Society Annual Conference: “Towards a New Justification of the Tastle-Wierman (TW) Dissention and Consensus Measures (and Their Potential Role in Education)”.
- 2008. Sustaining Member of the Teaching Academy at New Mexico State University
- 2007. Honoree at Hispanic Heritage Month exhibit of the New Jersey Orators
- 2006. Empire Who’s Who of Women in Education, Honor’s edition
- 2002. **Ph.D. Outstanding Graduating Senior Award** at New Mexico State University
- 1998-2001. Graduate Assistants in Areas of National Need Doctoral Fellowship supported by US Department of Education at New Mexico State University
- 1993. Graduated at the top 1% from the Master Degree in Computer Science at the University of Texas at El Paso
- 1991. Graduated with High Honors from the Bachelor Degree in Computer Science at the University of Texas at El Paso
- 1991. Scholarship from UPE, National Honor Society in Computer Science
- 1989-1991. Scholarship from the University of Texas at El Paso
- 1989-1991. Dean’s List at the University of Texas at El Paso

Grants

- 2008-2012. Empowering Southern New Mexico Women in Computing, co-PI, NSF Renewal, \$615,832.00
- 2011-2016. Computing Alliance of Hispanic-Serving Institutions, co-PI, NSF/BPC-AE Renewal, \$255,898.00

- 2008-2011. Empowering Southern New Mexico Women in Computing, co-PI, NSF/BPC-DP, \$615,832
- 2008-2011. Alliance Extension: Computing Alliance of Hispanic Serving Institutions, co-PI, NSF/BPC-AE, \$1,732,474
- 2009-2010. Computing Alliance of Hispanic Serving Institutions, co-PI, NSF/BPC-A, \$2,000,000
- 2006-2009. Computing Alliance of Hispanic Serving Institutions, senior personnel, NSF/BPC-A, \$2,000,000
- 2004-2009. Center for Research Excellence in Bioinformatics and Computational Biology, senior personnel, NSF/CREST, \$5,000,000
- 2004. Computing Support for the Next Generation Application-Driven Declarative Programming Systems, co-PI, NSF/CRI, \$100,000
- 2003-2008. Frameworks for the Development of Efficient and Scalable Knowledge-based Systems, senior personnel, NSF/MII, \$1,500,000
- 2001-2003. Parallel and Distributed Execution of Constraint Programming with Applications to Planning and Web Accessibility, co-PI, NSF, \$70,000

Publications

1. K. Villaverde, O. Kosheleva, “Towards More Detailed Value-Added Teacher Assessments: How Intervals Can Help”, *Journal of Uncertain Systems*, 2012, Vol. 6, No. 2, to appear.
2. F. Zapata, O. Kosheleva, K. Villaverde, “How to Tell When a Product of Two Partially Ordered Spaces Has a Certain Property?”, *Journal of Uncertain Systems*, 2012, Vol. 6, No. 2, to appear.
3. K. Villaverde. “Developing Techniques for Processing Data under Interval and Fuzzy Uncertainty, with an Emphasis on Parallelization and Education Applications: a Brief Overview”, proceedings of the *International Conference on Soft Computing, Computing with Words and Perceptions in System Analysis, Decision and Control*, Antalya, Turkey, pp. 239-242, 2011.
4. K. Villaverde, O. Kosheleva, “How to Reconstruct the System’s Dynamics by Differentiating Interval-valued and Set-valued Functions”, proceedings of the *International Conference on Rough Sets, Fuzzy Sets and Granular Computing*, Moscow, Russia, Springer Lecture Notes on Artificial Intelligence LNAI, Springer-Verlag, Berlin, Heidelberg, Vol. 6743, pp. 183-190, 2011.

5. K. Villaverde, G. Xiang, "Estimating Variance under Interval and Fuzzy Uncertainty: Parallel Algorithms", *Reliable Computing*, Vol. 15, No. 1, pp. 60-68, 2011.
6. K. Villaverde, O. Kosheleva, "Sometimes, Adding Uncertainty Can Decrease Privacy", *International Journal of Innovative Management, Information and Production*, Vol. 2, No. 2, pp. 32-38, 2011.
7. K. Villaverde, O. Kosheleva, "Why are Young People Risk-Prone", *International Journal of Innovative Management, Information and Production*, Vol. 2, No. 1, pp. 113-122, 2011.
8. K. Villaverde, O. Kosheleva, "Why are Young People Risk-Prone", proceedings of the *World Conference on Soft Computing*, San Francisco, CA, May 2011.
9. K. Villaverde, O. Kosheleva, M. Ceberio, "Computations under Time Constraints: Algorithms Developed for Fuzzy Computations Can Help", proceedings of the *IEEE North American Fuzzy Information Processing Society Annual Conference*, El Paso, TX, pp. 368-372, 2011.
10. F. Zapata, O. Kosheleva, K. Villaverde, "How to Tell When a Product of Two Partially Ordered Spaces Has a Certain Property: General Results with Application to Fuzzy Logic", proceedings of the *IEEE North American Fuzzy Information Processing Society Annual Conference*, El Paso, TX, pp 442-447, 2011.
11. D. Jaramillo, K. Villaverde, "CS0-Computer Animation Course Taught with Alice", proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, San Juan, Puerto Rico, 2011.
12. D. Salas, K. Villaverde, "Teaching Multidimensional Arrays and Nested For Loops to CS Students through PC Games", proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, San Juan, Puerto Rico, 2011.
13. B. Murphy, K. Villaverde, "Apple Mobile Devices: A Developers World", proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, San Juan, Puerto Rico, 2011.
14. K. Villaverde and O. Kosheleva, "Towards More Adequate Value-Added Teacher Assessments: How Intervals Can Help", Abstracts of the *GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics*, Lyon, France, pp. 140-141, 2010.
15. K. Villaverde, O. Kosheleva, "Towards a New Justification of the Tastle-Wierman (TW) Dissent and Consensus Measures (and Their Potential

- Role in Education)”, proceedings of the *IEEE North American Fuzzy Information Processing Society Annual Conference*, Toronto, Canada, pp. 110-116, 2010.
16. K. Villaverde, O. Kosheleva, “Towards More Detailed Value-Added Teacher Assessments, proceedings of the *IEEE World Congress on Computational Intelligence*, Barcelona, Spain, pp. 3126-3133, 2010.
 17. K. Villaverde, G. Ornelas, “Beyond Intervals: Phase Transitions Lead to More General Ranges, *Journal of Uncertain Systems*, Vol. 4, No. 4, pp. 312-319, 2010.
 18. K. Villaverde, O. Kosheleva, “Ordering Subsets of (Partially) Ordered Sets: Representation Theorems, *Applied Mathematical Sciences*, Vol 4, pp. 403-416, 2010.
 19. F. Zapata, O. Kosheleva, K. Villaverde, “Product of Partially Ordered Sets (Posets) and Intervals in Such Products, with Potential Applications to Uncertainty Logic and Space-Time Geometry”, Abstracts of the *GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics*, Lyon France, pp. 142-144, 2010.
 20. K. Villaverde, D. Jaramillo, “Game Design and Development Course Taught with Alice”, *the Journal of Computing Sciences in Colleges*, Vol. 26, No. 2, pp. 22-29, Dec. 2010.
 21. David Salas, K. Villaverde, “Teaching Entry Level Programming Concepts to Aspiring CS Majors through RPG Maker VX Games”, proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, Redmond WA, 2010.
 22. Daniel Jaramillo, K. Villaverde, “Using Video Game Concepts to Improve the Educational Process”, proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, Redmond WA, 2010.
 23. Jeremiah Davis, K. Villaverde, “Using Panda 3D to Create 3D Games”, proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, Redmond WA, 2010.
 24. Bretton Murphy, K. Villaverde, “Video Game Design and Development Using the G.E.C.K”, proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, Redmond WA, 2010.
 25. K. Villaverde, C. Jeffery, I. Pivkina, “Cheshire: Towards an Alice Based Game Development Tool”, proceedings of the *International Conference on Computer Games, Multimedia & Allied Technology*, Singapore, pp. 321-328, 2009.

26. D. Jaramillo, K. Villaverde, “Using Alice to Quickly Prototype Video Game Mechanics and Ideas”, proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, Mountain View, CA, 2009.
27. S. Ganapathineedi, K. Villaverde, “Gaming Mechanics in Alice”, proceedings of the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*, Mountain View, CA, 2009.
28. K. Villaverde, O. Kosheleva. “Uncertainty Can Decrease Privacy: An Observation”, abstracts of the *World Congress of the International Fuzzy Systems Association*, Lisbon, Portugal, p. 91, 2009.
29. K. Villaverde, O. Kosheleva, “Ordering of Type-2 Values: Representation Theorems”, proceedings of the *IEEE North American Fuzzy Information Processing Society Annual Conference*, Cincinnati, OH, 2009.
30. K. Villaverde, G. Xiang, “Estimating Variance Under Interval and Fuzzy Uncertainty: Parallel Algorithms”, proceedings of the *IEEE International Conference on Fuzzy Systems*, Hong Kong, China, pp. 1030-1033, 2008.
31. K. Villaverde, G. Ornelas, “Beyond Intervals: Phase Transitions Lead to More General Ranges”, proceedings of the *IEEE North American Fuzzy Information Processing Society Annual Conference*, New York, NY, 2008.
32. D. Berleant, K. Villaverde, O. Kosheleva, “Towards a More Realistic Representation of Uncertainty: an Approach Motivated by Info-Gap Decision Theory”, proceedings of the *IEEE North American Fuzzy Information Processing Society Annual Conference*, New York, NY, 2008.
33. M. Beheshti, R. Alo, J. Fernandez, A. Gates, D. Ranjan, A. Boadi, K. Villaverde, S. Hug, H. Thiry, L. Baker, “Work in Progress—CS0 Course Implementation in Computer Science”, proceedings of the *ASEE/IEEE Frontiers in Education Conference*, Saratoga Springs, NY, 2008.
34. V. Kreinovich, O. Kosheleva, S. Starks, K. Tupelly, G. Dimuro, A. Rocha Costa, K. Villaverde, “From Intervals to Domains: Towards a General Description of Validated Uncertainty with Potential Applications to Geospatial and Meteorological Data”, *Journal of Computational and Applied Mathematics*, 199, pp 411-417, 2007.
35. E. Pontelli, K. Villaverde, H. Guo, G. Gupta, “PALS: Efficient Or-Parallel Execution of Prolog on Beowulf Clusters”, *Theory and Practice of Logic Programming*, vol 7, issue 3, pp 1-63, 2006.
36. E. Pontelli, K. Villaverde, H. Guo, G. Gupta, “Stack Splitting: A Technique for Efficient Exploitation of Search Parallelism on Share-Nothing

Platforms”, *Journal of Parallel and Distributed Computing*, vol 66, issue 10, pp 1267-1293, 2006.

37. D. Pengelley, I. Pivkina, D. Ranjan, K. Villaverde, “Introducing a Primary Historical Source Project in a Discrete Mathematics and Computer Science Course: Counting Triangulations of a Polygon”, proceedings of the *ACM Technical Symposium on Computer Science Education*, Houston, TX, pp 318-322, 2006.
38. E. Platon, K. Tupelly, V. Kreinovich, S. Starks, K. Villaverde, “Exact Bounds for Interval and Fuzzy Functions Under Monotonicity Constraints, with Potential Applications to Biostratigraphy”, proceedings of the *IEEE International Conference on Fuzzy Systems*, Reno, NV, pp 891-896, 2005.
39. K. Tupelly, V. Kreinovich, K. Villaverde, “Checking if there exists a Monotonic Function that Is Consistent with the Measurement Results: An Efficient Algorithm”, *Reliable Computing*, vol 11, pp 291-312, 2005.
40. K. Villaverde, V. Kanagiri, “Improvement and Evaluation of an Efficient Methodology to Transform a Classroom Based Course into a Web Based Course”, proceedings of the *Science, Engineering and Technology Education Conference*, New Mexico State University, 2005.
41. K. Villaverde, V. Kanagiri, “Improvement and Evaluation of an Efficient Methodology to Transform a Classroom Based Course into a Web Based Course”, proceedings of the *Sun Conference On Teaching and Learning*, the University of Texas at El Paso, 2005.
42. K. Villaverde, D. Ranjan, D. Pengelley, G. Bezhanishvili, H. Leung, J. Lodder, J. Lucero Bryan, “Introducing a Primary Historical Source Project in a Discrete Mathematics and Computer Science Course: Counting Triangulations of a Polygon”, proceedings of the *Science, Engineering and Technology Education Conference*, New Mexico State University, 2005.
43. K. Villaverde, D. Ranjan, D. Pengelley, G. Bezhanishvili, H. Leung, J. Lodder, J. Lucero Bryan, “Introducing a Primary Historical Source Project in a Discrete Mathematics and Computer Science Course: Counting Triangulations of a Polygon”, proceedings of the *Sun Conference On Teaching and Learning*, the University of Texas at El Paso, 2005.
44. J. Lucero-Bryan, G. Bezhanishvili, K. Villaverde, D. Ranjan, D. Pengelley, H. Leung, J. Lodder, “Non-Traditional Methodology of Instruction Introducing a Primary Historical Source in an Undergraduate Course in Discrete Mathematics”, proceedings of the *Science, Engineering and Technology Education Conference*, New Mexico State University, 2005.

45. J. Lucero-Bryan, G. Bezhanishvili, K. Villaverde, D. Ranjan, D. Pengelley, H. Leung, J. Lodder, “Non-Traditional Methodology of Instruction Introducing a Primary Historical Source in an Undergraduate Course in Discrete Mathematics”, proceedings of the *Sun Conference On Teaching and Learning*, the University of Texas at El Paso, 2005.
46. V. Kreinovich, D. Gracaliz, A. Rocha Costa, O. Kosheleva, S. Starks, K. Tupelly, K. Villaverde, “From Intervals to Domains: A General Description of Validated Uncertainty, with Applications to Geospatial and Meteorological Data”, abstracts of the *GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic, and Validated Numerics*, Fukuoka, Japan, pp. 72-73, 2004.
47. P. Debroux, J. Boehm, F. Modave, V. Kreinovich, G. Xiang, K. Beck, K. Tupelly, R. Kandathi, L. Longpre, K. Villaverde, “Using 1-D Radar Observations to Detect a Space Explosion Core among the Exploitation Fragments: Sequential and Distributed Algorithms”, proceedings of the *IEEE Digital Signal Processing Workshop and Workshop on Signal Processing Education*, Taos Ski Valley, NM, pp 273-277, 2004.
48. K. Villaverde and E. Pontelli, “An Investigation of Scheduling in Distributed Constraint Logic Programming”, proceedings of the *International Conference on Parallel and Distributed Computing Systems*, San Francisco, CA, pp 98-123, 2004.
49. K. Villaverde, E. Pontelli, H-F. Guo, G. Gupta, “A Methodology for Order-Sensitive Execution of Non-deterministic Languages on Beowulf Platforms”, proceedings of the *International Euro-Par Conference on Parallel and Distributed Computing*, Klagenfurt, Austria, pp 694-703, 2003.
50. K. Villaverde, “An Efficient Methodology to Transform a Classroom Based Course into a Web Based Course”, proceedings of the *Sun Conference On Teaching and Learning*, the University of Texas at El Paso, 2003.
51. K. Villaverde, “An Efficient Methodology to Transform a Classroom Based Course into a Web Based Course”, proceedings of the *Science, Engineering and Technology Education Conference*, New Mexico state University, 2003.
52. K. Villaverde, *An Efficient Methodology to Exploit OR-Parallelism on Distributed Memory Systems*, PhD Dissertation, New Mexico State University, 2002.
53. K. Villaverde, H. Guo, E. Pontelli, G. Gupta, “High Performance (Constraint) Logic Programming on the Beowulf Architecture”, proceedings of the *International Conference on Logic Programming*, Paphos, Cyprus Springer Verlag LNCS 2237, pp 27-42, 2001.

54. K. Villaverde, E. Pontelli, H. Guo, G. Gupta, "Incremental Stack-Splitting Mechanisms for Efficient Parallel Implementation of Search-based AI Systems", proceedings of the *International Conference on Parallel Processing*, Valencia, Spain, pp 287-294, 2001.
55. K. Villaverde, H. Guo, E. Pontelli, G. Gupta, "Incremental Stack-Splitting", proceedings of the *Workshop on Parallelism and Implementation Technology for (Constraint) Logic Programming Languages held in conjunction with the International Conference on Computational Logic*, London, UK, pp 6-21, 2000.
56. K. Villaverde, *Survey on Parallel Logic Programming, Distributed Logic Programming, and Scheduling*, New Mexico State University, Computer Science Department, Technical report 0010, 2000.
57. K. Villaverde, H. Guo, G. Gupta, E. Pontelli, *Incremental Stack-Splitting*, New Mexico State University, Computer Science Department, Technical report 0011, 2000.
58. P. Baggett, A. Ehrenfeucht, J. Jungbauer, K. Villaverde, "Designing and Testing a Multimedia Browsing System Based on Cohesion", proceedings of the *International Conference on Computers and Advanced Technology in Education*, pp 9-12, 1998.
59. E. Merenyi, S. Starks, K. Villaverde, "Hyper-Spectral Satellite Images: Interval Methods May Be Helpful", *Reliable Computing*, vol 4, pp. 395-397, 1998.
60. C. Eick, K. Villaverde, "Robust Algorithms that Locate Local Extrema of a Function of One Variable from Interval Measurement Results: A remark", *Reliable Computing*, 2 (3), pp 213-218, 1996.
61. V. Kreinovich, K. Villaverde, "A Quadratic-Time Algorithm for Smoothing Interval Functions", *Reliable Computing*, 2 (3), pp 255-264, 1996.
62. K. Villaverde, V. Kreinovich, "Parallel Algorithms that Locate Local Extrema of a Function of One Variable from Interval Measurement Results", in *Extended Abstracts of the International Workshop on Applications of Interval Computations, Reliable Computing, Supplement*, El Paso, TX, pp. 212-219, 1995.
63. G. Deboeck, K. Villaverde, V. Kreinovich, "Interval Methods for Presenting the Performance of Financial Trading Systems", in *Extended Abstracts of the International Workshop on Applications of Interval Computations, Reliable Computing, Supplement*, El Paso, TX, pp. 67-70, 1995.

64. K. Villaverde, *Linear-Time Algorithm that Locates Local Maxima and Minima of a Function from Given Approximate Measurement Results*, Master thesis, University of Texas at El Paso, 1993.
65. K. Villaverde, V. Kreinovich, “A Linear-Time Algorithm that Locates Local Extrema of a Function of One Variable from Interval Measurement Results”, *Interval Computations*, No. 4, pp 176-194, 1993.
66. A. Bernat, L. Cortes, V. Kreinovich, K. Villaverde, “Intelligent Parallel Simulation—a Key to Intractable Problems in Information Processing”, proceedings of the *Annual Conference on Modeling and Simulation*, Pittsburgh, PA, part 2, pp 959-969, 1992.
67. K. Villaverde, “How to Locate Maxima and Minima of a Function in Parallel from Approximate Measurement Results”, abstracts of the *UTEP Computer Science Students Conference*, pp 43-44, 1991.
68. V. Kreinovich, K. Villaverde, *Towards Modal Interval Analysis: How to Compute Maxima and Minima of a Function from Approximate Measurement Results*, University of Texas at El Paso, Computer Science Department, Technical Report UTEP-CS-91-9, 1991.
69. K. Villaverde, “An algorithm for Planning Collision-Free Paths among Prism Shaped Obstacles”, abstracts of the *UTEP Computer Science Students Conference*, 1991.
70. O. Kosheleva, V. Kreinovich, K. Villaverde, *A Polynomial-Time Algorithm for Calculating the Shapley Vector (Monte-Carlo Method)*, University of Texas at El Paso, Computer Science Department, Technical Report UTEP-CS-90-18, 1990.

Professional Talks

- 2011. Degree-Based (Interval and Fuzzy) Techniques in Math and Science Education, *10th Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2011. Game Development Senior Project Class with Greenfoot, *International Sun Conference of Teaching and Learning*, UTEP.
- 2011. Game Design and Development Course with Greenfoot, *9th Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2010. Interval Computations and their Applications, *NMSU Computer Science Colloquium*.

- 2010. Towards More Adequate Value-Added Teacher Assessments: How Intervals Can Help, *GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics*, Lyon, France.
- 2010. Product of Partially Ordered Sets (Posets) and Intervals in Such Products, with Potential Applications to Uncertainty Logic and Space-Time Geometry, *GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics*, Lyon, France.
- 2010. Why Ellipsoid Constraints, Ellipsoid Clusters, and Riemannian Space-Time: Dvoretzky's Theorem Revisited, *8th Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2010. Uncertainty Can Decrease Privacy: An Observation, *7th Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2009. Graduate Level Game Design and Development Course Taught with Alice, *6th Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2008. Teaching Computer Science Concepts Using Computer Games, *CIP-ITECH International Research Congress*, Cd. Juarez, Mexico.
- 2008. Beyond Intervals: Phase Transitions Lead to More General Ranges, *GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Verified Numerical Computations*, El Paso, TX.
- 2008. Beyond Intervals: Phase Transitions Lead to More General Ranges, *4th Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2008. Teaching Computer Science and Mathematics Concepts Using Computer Games, *3rd Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2007. Estimating Variance under Interval and Fuzzy Uncertainty: Parallel Algorithms, *2nd Joint UTEP/NMSU Workshop on Mathematics, Computer Science, and Computational Sciences*.
- 2005. Improvement and Evaluation of an Efficient Methodology to Transform a Classroom Based Course into a Web Based Course, *Colloquium at the Computer Science Department of the University of Texas at El Paso*.

- 2005. Introducing a Primary Historical Source Project in a Discrete Mathematics and Computer Science Course: Counting Triangulations of a Polygon, *Annual Meeting of the Southwestern Section of the Mathematical Association of America*.
- 2002. Gave the workshop “Teaching One-on-One” at the Teaching Academy of NMSU

Teaching and Student Research Supervision

Courses Taught

- Introduction to Computer Science
- Discrete Mathematics for Computer Science
- Introduction to Data Structures
- Data Structures and Algorithms
- Programming Languages
- Senior Project on Game Design and Development
- Game Design and Development
- Game Programming in Java
- Computer Animation
- C Programming
- Computer Literacy

Undergraduate students

1. Nathan Brooks (Research on Game Development, 2011)
2. David Salas (Research on Game Development, 2009-2011)
3. Richard Trujillo (Research on Game Development, 2009-2011)
4. Bretton Murphy (Research on Game Development, 2009-2011)
5. Phillip Pruett (Research on Game Development, 2010).
6. Alerin Yazzie (Research on Game Development, 2010).
7. Jeremiah Davis (Research on Game Development, 2009-2010)

8. Evan Bailey (Research on Game Development, 2009-2010)
9. John Garber (Senior Project on Game Development, 2008)
10. Torriel Wright (Senior Project on Game Development, 2008)
11. Kelly Mills (Senior Project on Game Development, 2008)
12. Gina Hume (Research on Game Development, 2008)
13. Jared Naranjo (Research on Game Development, 2008)
14. Richard Alvarez (Research on Game Development, 2008)
15. Katherine Paige Dollahon (Research on Game Development, 2008)
16. Daniel Dominguez (Research on Game Development, 2008)
17. Rodolfo Valenzuela (Research on Game Development, 2007)
18. Philip Killough (Senior thesis on Game Development, 2007)
19. Ben Sanford (Senior thesis on Game Development, 2007)
20. Amy Rains (Senior thesis on Robotics, 2005)

Master students

1. Daniel Jaramillo (Master student on Game Design and Development, Project: "Windows Phone 7 action-puzzle game", 2011)
2. Chandrasekhar Thotakura (Master student on Game Design and Development, Project: "Educational Action-Maze Game that Teaches Recursion in Greenfoot", 2011)
3. Ramya Appani (Master student on Game Design and Development, Project: "Educational Adventure game in Greenfoot", 2010)
4. Mahitha Sondarajan (Master student on Game Design and Development, Project: "Educational Puzzle game in Greenfoot", 2010)
5. Sunil Nuthalapati (Master student on Game Design and Development, Project: "Action Adventure RPG game in Game Maker", 2010)
6. Santosh Kotamarthi (Master student on Game Design and Development, Project: "2D Car Racing in Game Maker", 2010)
7. Sujatha Ancha (Master student on Game Design and Development, Project: "Puzzle Game in Game Maker", 2009)

8. Shilpa Ganapathineedi (Master student on Game Design and Development, Project: "Design and Implementation of Game Mechanics in Alice", 2009)
9. Kanchana Vivekanandhan (Master student on Game Design and Development, Project: "Platform Game on Game Maker", 2009)
10. Aditya Dara (Master student on Game Design and Development, Project: "2D Shooter Game in XNA", 2008)
11. Abhijith Harapanahalli (Master student on Game Design and Development, Project: "2D Shooter Game in XNA", 2008)
12. Rajesh Akavaram (Master student on Game Design and Development, Project: "3D Car Race Game in Alice", 2008)
13. Min Li (Master Student on Web Based Teaching Technology, Project: "Chat Queue System", 2006)
14. Anisha Thoupur (Master student on Interval Computations, Project: "Interval Analysis of Functions", 2005)
15. Manoj Yekkala (Master student on Web Based Teaching Technology, Project: "Virtual Classroom for Discrete Mathematics", 2005).
16. Iris Chavez (Master student on Online Systems, Project: "A Self Maintained Dynamic Website", 2005)
17. Vineel Reddy Kota (Master student on Web Based Programming, Project: "Database Driven Web Applications Using Multi-Tier Architecture", 2005)
18. Viney Kanagiri (Master student on Web Based Teaching Technology, Project: "Online Distance Education Tools", 2005)
19. Manoj Yarlayadda (Master student working on Online Systems, Project: "Company Individual and Multi-Organization Networks (CIMON)", 2004)
20. Prasanth Kanakadandi (Master student working on Web Based Teaching Technology, Project: "Quiz Builder and Analyzer", 2004)
21. James Zhang (Master student working on Visualization Tools for Parallel and Distributed Logic Programming Systems, Project: "Network Load-Share Simulator", 2004)
22. Dayong Qu (Master student on Online Systems, Project: "Online E-Commerce System With J2EE and N-TIER Architecture", 2004).

Committee Member

1. Pandiarajan Subramani (CS Master student, Project: “Dr. Droid: An Android Mobile Application”, 2010)
2. Santosh Punugu (CS Master student, Project: “Arithmetic Tutorial Application for Android Phones”, 2010)
3. Satish Venkatesan (CS Master student, Project: “A Voice Reminder Application for Android Phones”, 2010)
4. Jason Kuriakose (CS Master student, Project: “Online Auction”, 2010)
5. Anu Payyapilly (CS Master student, Project: “Data Mining Applications: Stock Data”, 2010)
6. Bader Albelwi (CS Master student, Project: “Low Cost Whiteboard”, 2009)
7. Susmitha Venigalla (CS Master student, Project: “Enterprise Collaboration Tool”, 2009)
8. Sanatkumar Bhohe (CS Master student, Project: “Web Application in .NET Smart Shopping Website”, 2009)
9. Carlos Vazquez (CS Master student, Project: “Reliable Web Services”, 2009)
10. Premalatha Chinnasami (CS Master student, Project: “NMSU-YouTube Mashup”, 2009)
11. Sheetal Jain (CS Master student, Project: “Analysis of Biological Data Using Data Mining Applications”, 2008)
12. Maheshwar Geeredy (CS Master student, Project: “Packet and Attack Generator Software”, 2008)
13. Pathan Younes (CS Master student, Project: “Secure Stock Exchange System Using Web Services”, 2008)
14. Syed Ali-Khan (CS Master student, Project: “Syndicated Search with Bridge Service to Translate Web Service into RSS Feeds”, 2008)
15. Babukhan Pathan (CS Master student, Project: “Web Service and AJAX”, 2007)
16. Vijaya Mekala (CS Master student, Project: “Web Image Accessibility System for the Visually Impaired”, 2007)

17. Ajay Gaddam (CS Master student, Project: “Web Image Accessibility System for the Visually Impaired”, 2007)
18. Ravi Kumar Naviri (CS Master student, Project: “A Tool for Classifying HTML Tables Using Machine Learning Algorithms”, 2007)
19. Sandeep Varma Alluri (CS Master student, Project: “Majority Based Accessibility Evaluation Tool”, 2007)
20. Arpith Shah (CS Master student, Project: “An Audio Tool for RSS Feeds”, 2007)
21. Chopperla Karthikeya (CS Master student, Project: “Developing an IDE (Integrated Development Environment) for Answer Set Programming”, 2007)
22. Omar El-Khatib (CS Doctoral student, Dissertation: “Towards a Programming Environment for Answer Set Programming”, 2007)
23. Neeraja Veeramachaneni (EE Master student, Project: “On Building a Cable Robot”, 2006)
24. Anil Teella (CS Master student, Project: “Account Management and Aural Support for CVE”, 2006)
25. Shyam Bukka (CS Master student, Project: “Representing 3D objects in a Virtual Environment”, 2006)
26. Syed Mohammed Shakir (CS Master student, Project: “Modeling Scientific Data: Quantifying Population Dynamics of Emerging Pathogens”, 2006)
27. Nandini Arkatala (CS Master student, Project: “GSOAP Web Services”, 2006)
28. Subhaschandra Pinnamaraju (CS Master student, Project: “Distinguishing URLs Using Machine Learning Algorithms”, 2006)
29. Senlin Liang (CS Master student, Project: “Symmetry Breaking in Logic Programming”, 2006)
30. Padma Mallapragada (CS Master student, Project: “Analysis and Application of Performance Prediction Tools”, 2006)
31. Sumaharsha Y. B. E (EE master student, Project: “Performance Evaluation of the IEEE 802.11A WLAN Standard at 1 GHz on the Martian Surface”, 2006)

32. Rashmi S. Ramagiri (CS Master student, Project: “Integrating the Moodle Course Management System into a Collaborative Virtual Environment”, 2006)
33. Marco T. Gallo (Chemical Engineering Doctoral student, Dissertation: “Computer Simulations of Hydrogen and Methane in Inorganic Molecular Sieves Composed of TitanoSilicates and Zeolite ZSM-22”, 2005)
34. Padmaja Chowti (CS Master student, Project: “Screen Shots to Monitor Web Exams”, 2005)
35. Omar Alandejani (EE Master student, Project: “Designing Power Transmission Lines Using MathCad”, 2004)
36. Venkata Phani K. Chodiseti (CS Master student, Project: “Web Application to Demonstrate Model View Controller Design Pattern”, 2004)
37. Harshad Poogalia (CS Master student, Project: “JSmodels And Database Connectivity”, 2003)

Departmental Service

- 2010-Present. Chair of website committee.
- Recruitment and outreach activities
 - Recruitment bulletin boards outside CS office
 - Recruitment web links in CS website
 - Recruitment tables
 - * NMSU Aggie Day
 - * NMSU Visitors Day
 - * NMSU Aggie Experience Day
 - * NMSU Native American College Day
 - * Local High Schools Career Day
 - * Engage New Mexico Day
 - Recruitment presentations
 - * In CS0 (CS209), CS1 (CS172), and CS2 (CS272) classes
 - * CS Summer camp for community college students
 - * NMSU National Scholars Day
 - * Tecnologico de Juarez Day
 - * Las Cruces High Schools
 - Onate High School

- Mayfield High School
- Las Cruces High School
- Mesilla Valley Christian High School
- 2011. Google App Inventor High School Competition Judge, Young Women in Computing.
- 2011. Presentation on Game Development Summer Research Recruitment, Native American Bridge Program.
- 2007-Present. Advised undergraduate and graduate students
- 2010. Represented the CS dept at the NMSU Foundation Campaign Celebration at the Farm and Ranch Museum with students developed computer games.
- 2010, 2008. Faculty representative at graduation commencement
- 2010, 2006-2008. Taught computer animation during the Young Women in Computing Summer Camps
- 2009-2011. Supervised graduate student teaching of Computer Animation course
- 2007-2011. Interviewed faculty candidates
- 2005-2009. Publicity, website, and outreach committee member
- 2007-2009. Supervised graduate student teaching of C Programming course during the Summer
- 2009. Supervised teaching of computer animation during the Young Women in Computing Summer Camp
- 2008. Czar of the Qualls Examinations committee
- 2007-2008. Faculty hiring committee member
- 2005. Provided teaching assistance during the Computer Science Department Bioinformatics Summer Workshop
- 2005. Supervised graduate student teaching of Java Programming course during the Fall semester

University Service

- 2010-Present. Gaming major negotiations with Creative media dept and the Games Learning Lab.
- 2008-Present. Faculty advisor for the Game Developers Club
- 2010. Research supervisor for a Native American student on the Bridges program
- 2009. Presentation judge at Graduate Research and Arts Symposium
- 2007-2008. Poster judge at the Student Research Conference of the New Mexico Alliance for Minority Participation
- 2004-2007. Faculty Advisor of Bridges, Cultural Student Organization that Promotes Friendship amongst International Students
- 2007. Helped with the accreditation of our C Programming course for the College of Education
- 2006. Helped with the accreditation of our C Programming course for the College of Engineering
- 2006. Poster judge at Graduate Research and Arts Symposium
- 2005. Participated as a faculty panel member on the topic “Teaching Large Classes” at the Science, Engineering and Technology Education Conference
- 2005. NSF Advance Distinguished Professor Host of Dr. Lydia Kavradi, Bioinformatics expert from Rice University

Other Service

- 2010-Present. Reviewer for the *IEEE North American Fuzzy Information Processing Society Annual Conference*
- 2009-Present. Reviewer of students research posters presented at the *Annual Meeting of the Computer Alliance of Hispanic Serving Institutions*
- 2008-Present. Local organizer for the *Joint NMSU/UTEP Workshop on Mathematics, Computer Science, and Computational Sciences*
- 2011. Reviewer for the *Journal of Information Sciences*
- 2009-2011. Reviewer for the Hawaii *International Conference on System Sciences*

- 2010-2011. Reviewer for the *Journal of Computing Sciences in Colleges*
- 2010. Reviewer for the *IEEE International Conference on Fuzzy Systems*
- 2010. Reviewer for the *International Journal of Computer Systems Science and Engineering*
- 2010. Reviewer for the *International Journal of Reliability and Safety*
- 2009. Reviewer for the *Journal of Intelligent Technologies and Applied Statistics*
- 2008. Reviewer for the *International Conference on Logic Programming*

Other Professional Activities

- 2007-2011. Attended teaching and professional development workshops of the Teaching Academy at NMSU
- 2006-2010. Attended the Young Women in Computing monthly presentations of Professional Women in the Sciences at NMSU
- 2009. Attended Richard Tapia Celebration of Diversity in Computing
- 2009. Attended the Broadening Participation in Computing Community Meeting
- 2006-2009. Attended the Annual Meetings of the Computer Alliance of Hispanic Serving Institutions
- 2007-2008. Attended events of the Milestones Project, created to honor and celebrate passages in the lives of the diverse community of women at NMSU
- 2007,2004. Attended Grace Hopper Conference of Women in Computing
- 2006. Attended workshop “Afinity Research Groups Orientation” offered by the Computer Alliance of Hispanic Serving Institutions
- 2006. Attended workshop “Peer Lead Team Learning” offered by the Computer Alliance of Hispanic Serving Institutions
- 2006. Attended NSF Advanced Distinguished Professor Lunches at NMSU and always brought a female undergraduate student in Computer Science to encourage her to pursue graduate studies
- 2005. Attended the Broadening Participation in Computing grant preparation meeting for the creation of the Computer Alliance of Hispanic Serving Institutions

- 2005. Attended the ACM Technical Symposium on Computer Science Education
- 2003. Participated at the Gaining Retention and Achievement for Students Program at NMSU
- 2003. Attended Distance Education Conference: Expanding the Learning Horizon at NMSU
- 2001-2003. Attended teaching and professional development workshops of the Teaching Academy at NMSU
- 1999. Attended the Summer School on Logic and Constraint Programming at NMSU
- 1993. Attended the Symposium Windows of Opportunity for Female Students in Computing

Professional Memberships

- 2011-Present. Member of Mathematical Association of America
- 2011-Present. Member of American Association for the Advancement of Science
- 2011-Present. Member of Sigma Xi, The Scientific Research Society
- 2010-Present. Member of Hispanics in Computing
- 2008-Present. Member of IEEE
- 2007-Present. Member of of the Association of Computing Machinery
- 2007-Present. Member of Latinas in Computing
- 2009-Present. Distinguished Member of the Teaching Academy at New Mexico State University
- 2008-2010. Member of MentorNet
- 2008. Sustaining Member of the Teaching Academy at New Mexico State University
- 2007. Treasurer of New Mexico Network for Women in Science and Engineering, Southern Chapter
- 2007-2008. Member of the Hispanic Caucus, New Mexico State University
- 2000. Member of the Association for Logic Programming

- 1994. Member of the Mathematical Association of America
- 1994. Member of TOASTMASTERS, International Club in the Art of Public Speaking
- 1993. Member of Sigma Xi, The Scientific Research Society
- 1993. President of UPE at UTEP, Honor Society in Computer Science
- 1992. Vice-President of UPE at UTEP
- 1991. Secretary and Treasurer of UPE at UTEP
- 1991. Member of American Association of University Women
- 1991. Member of Alpha Chi, National College Honor Scholarship Society

Other Professional Experience

- 2000-2001. New Mexico State University, Computer Science Department, **Instructor** for C Programming course
- 1998-2002. New Mexico State University, Computer Science Department, **Research Assistant** on Parallel and Distributed Logic Programming
- 1998-2000. New Mexico State University, Computer Science Department, **Teaching Assistant**
 - Introduction to Computer Science
 - Introduction to Data Structures
 - Summer Camp for Native American Students
 - C programming
- 1997. New Mexico State University, Mathematics Department, **Research Assistant**, programmed in Perl, Javascript, and HTML for a multimedia browsing system funded by the Office of Naval Research, (<http://math.nmsu.edu/~kavilla/version4/birds.html>)
- 1994-1997. Company: NORTEL Networks, Systems Engineering Department, **Broadband Systems Engineer**, performed the office engineering of the MCI switches word wide according to traffic, hardware, features, calls mix, etc
- 1994. Company: NORTEL Networks, **Software Design Engineer**, performed software fast features for MCI

- 1991-1993. University of Texas at El Paso, **Research Assistant** under a grant from the National Science Foundation, performed research in Interval Computations, Robotics, and Artificial Intelligence
- 1991-1993. University of Texas at El Paso, **Teaching Assistant** under a grant from the National Science Foundation, taught PASCAL
- 1990-1991. University of Texas at El Paso, **Research Assistant** under a grant from NASA Johnson Space Center, performed research in Uncertain Reasoning in Expert Systems, interval Computations, and Modal Logic

Miscellaneous

- US citizen
- Hispanic
- 100% fluent in Spanish

References

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- Dr. Desh Ranjan, Department of Computer Science, Old Dominion University, Engineering and Computational Sciences Bldg, 4700 Elkhorn Ave, Suite 3300, Norfolk, VA 23529-0162, USA, Email: dranjan@cs.odu.edu, Office phone: (757) 683-6001 ext. 4817
- Dr. Vladik Kreinovich, Department of Computer Science, University of Texas at El Paso, 500 W. University, El Paso, TX 79968, USA, Email: vladik@cs.utep.edu. Office phone: (915) 747-6951
- Dr. Hing Leung, Department of Computer Science, New Mexico State University, BOX 30001, Las Cruces, NM 88003, USA, Email: hleung@cs.nmsu.edu, Office phone: (505)646-1038