

Misha V. Koshelev

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EDUCATION

M.D. Baylor College of Medicine, (anticipated) 2011
Houston, TX

Ph.D. Baylor College of Medicine, (anticipated) 2010
Houston, TX

A.B. Harvard, 2003
Boston, MA
Psychology

Massachusetts Institute of Technology
Boston, MA
Brain and Cognitive Sciences major
Transferred out in 2000

HONORS and AWARDS

2007 8-Stranded Beta-Barrel Jelly Roll Award, Best Teaching Assistant
2006 Professor John J. Trentin Scholarship Award
2006 Claude W. Smith Fellowship Award
2005 Baylor Research Advocates for Student Scientists Scholar
2005 MSTP Excellence in Basic Sciences Award
2005 Baylor Basic Science Highest Honors Award
2004 MSTP First Year Academic Excellence Award
2004 Class Representative for Neuroscience Course
1999 Siemens Award for Advanced Placement

RESEARCH EXPERIENCE

2001.2 Harvard University, Department of Psychology. Nicholas Epley, Ph.D.
“The Imposter Phenomenon in the Harvard Undergraduate and Faculty
Populations.”

1993.98 University of Texas at El Paso, Various Departments and Faculty
See Publications for information on individual research projects.

PUBLICATIONS

Koshelev M, Pierluissi J. Measuring Strong Currents by Their Magnetic Field: A New Method. *SC-COSMIC, South Central Computational Sciences in Minority Institutions Consortium, First Student Conference in Computational Sciences, Houston, TX, Abstracts* October 21-22, 1995; 5-6.

Koshelev M: Testing Earthquake Damage Prevention Methods with Simulated Fractal Earthquakes. *SC-COSMIC, South Central Computational Sciences in Minority Institutions Consortium, First Student Conference in Computational Sciences, Houston, TX, Abstracts* October 21-22, 1995; 3-4.

Koshelev M: Computationally Complicated Problems of Numerical Computations (in Particular, Interval Computations), Biofeedback, Computer Games, and Gulf War: An Idea. *ACM Special Interest Group on Numerical Mathematics (SIGNUM) Newsletter* 1996; 31:2-7.

Koshelev M, Kreinovich V. Fuzzy Interpretation of Quantum Mechanics Made More Convincing: Every Statement with Real Numbers Can Be Reformulated in Logical Terms. In: Dimitrov V, Dimitrov J (eds.): *Fuzzy Logic and the Management of Complexity (Proceedings of the 1996 International Discourse)*. *UTS Publ., Sydney, Australia* 1996; 3:296-299.

Koshelev M: Fuzzy Logic Explains the Golden Proportion. *BULLETIN for Studies and Exchanges on Fuzziness and its Applications (BUSEFAL)* 1996; 67:14-17.

Koshelev M, Kreinovich V: Why Monotonicity in Interval Computations? A Remark. *ACM Special Interest Group on Numerical Mathematics (SIGNUM) Newsletter* 1996; 31:4-8.

Finkelstein AM, **Koshelev M**: Case Studies of Choosing a Numerical Differentiation Method Under Uncertainty: Computer-Aided Design and Radiotelescope Network Design. *ACM Special Interest Group on Numerical Mathematics (SIGNUM) Newsletter* 1996; 31:9-26.

Kosheleva O, Cabrera S, Gibson GA, **Koshelev M**. Fast Implementations of Fuzzy Arithmetic Operations Using Fast Fourier Transform (FFT). *Proceedings of the 1996 IEEE International Conference on Fuzzy Systems, New Orleans* September 8-11, 1996; 3: 1958-1964.

Koshelev M: How To Organize a World Wide Web Site. *SC-COSMIC, South Central Computational Sciences in Minority Institutions Consortium, Second Student Conference in Computational Sciences, El Paso, TX, Abstracts* October 25-27, 1996; 15-18.

Dimitrov V, Koshelev M, Kreinovich V. Acausal Processes and Astrophysics: Case When Uncertainty is Non-Statistical (Fuzzy?). *BULLETIN for Studies and Exchanges on Fuzziness and its Applications (BUSEFAL)* January 1997: 69:183-191.

Koshelev M, Taillibert P: Optimal Approximation of Quadratic Interval Functions. *Proceedings of the NASA URC (University Research Center) Technical Conference, Albuquerque, NM* February 16-19, 1997; 425-430.

Alefeld G, **Koshelev M**, Mayer G: Fixed Future and Uncertain Past: Theorems Explain Why It Is Often More Difficult To Reconstruct the Past Than to Predict the Future. *Proceedings of the NASA URC (University Research Center) Technical Conference, Albuquerque, NM* February 16-19, 1997; 23-27.

Kreinovich V, Pierluissi J, **Koshelev M**: A new method of measuring strong currents by their magnetic fields. *Computers & Electrical Engineering* 1997; 23: 121-128.

Koshelev M: Fuzzy Logic Explains the Golden Proportion. *International Journal of Intelligent Systems* 1997; 12:415-417.

Koshelev M: How to make World Wide Web sites faster and easier to use. *BULLETIN for Studies and Exchanges on Fuzziness and its Applications (BUSEFAL)* Summer 1997: 71:98-107.

Koshelev M, Starks S: Energy from space: as new potential application of interval computations. *ACM SIGNUM Newsletter* 1997: 32:9-13.

Alefeld G, **Koshelev M**, Mayer G: Why it is computationally harder to reconstruct the past than to predict the future. *International Journal of Theoretical Physics* 1997; 36:1683-1689.

Koshelev M, Kreinovich V: Towards Computers of Generation Omega -Non-Equilibrium Thermodynamics, Granularity, and Acausal Processes: A Brief Survey. *Proceedings of the International Conference on Intelligent Systems and Semiotics (ISAS'97), National Institute of Standards and Technology Publ., Gaithersburg, MD* 1997; 383-388.

Koshelev M: How to make World Wide Web sites faster and easier to use. Preliminary version in *Working Notes of the AAAI Symposium on Frontiers in Soft Computing and Decision Systems, Boston, MA* November 8-10, 1997; 19-23. Final version in Medsker L (ed.): *Frontiers in Soft Computing and Decision Systems. AAAI Press (Publication No. FS-97-04)* 1997; 11-15.

Kosheleva O, Cabrera S, Gibson GA, **Koshelev M**: Fast Implementations of Fuzzy Arithmetic Operations Using Fast Fourier Transform (FFT). *Fuzzy Sets and Systems* 1997; 91: 269-277.

- Koshelev M**, Luc Longpre: Approximation of Interval Functions. Chapter 19 in: Kreinovich V, Lakeyev A, Rohn J, Kahl P: Computational complexity and feasibility of data processing and interval computations. Kluwer 1997; 207-217.
- Fox D, Schmidt M, **Koshelev M**, Kreinovich V, Longpre L, Kuhn J: We must choose the simplest physical theory: Levin-Li-Vitanyi theorem and its potential physical applications. In: Erickson GJ, Rychert JT, Smith CR (eds.): Maximum Entropy and Bayesian Methods. Kluwer 1998; 238-250.
- Koshelev M**: Maximum Entropy And Acausal Processes: Astrophysical Applications And Challenges. In: Erickson GJ, Rychert JT, Smith CR (Eds.): Maximum Entropy And Bayesian Methods. Kluwer 1998; 253-262.
- Koshelev M**: How to make World Wide Web sites faster and easier to use. *Heuristics The Journal of Intelligent Technologies* 1997/98; 10: 44-50.
- Koshelev M**: We can measure any distance or any amount of time with a most primitive clock and a most primitive ruler: a space-time version of Tyszka's result. *Geombinatorics* 1998; 7: 95-100.
- Koshelev M**, Longpre L: A brief description of Gell-Mann's lecture and how intervals may help to describe complexity in the real world. *Reliable Computing* 1998; 4:105-107.
- Koshelev M**, Starks SA: Intervals (and More General Uncertainty Sets), Counterfactual Implication, 5-D Space-Time, and United Field Theory. *International Conference on Interval Methods and their Application in Global Optimization (INTERVAL'98), April 20-23, Nanjing, China, Extended Abstracts* 1998: 68-70.
- Koshelev M**: Intervals and Acausal Processes. *International Conference on Interval Methods and their Application in Global Optimization (INTERVAL'98), April 20-23, Nanjing, China, Extended Abstracts* 1998; 65-67.
- Nguyen HT, **Koshelev M**, Kosheleva O, Kreinovich V, Mesiar R: Computational Complexity and Feasibility of Fuzzy Data Processing: Why Fuzzy Numbers, Which Fuzzy Numbers, Which Operations with Fuzzy Numbers. *Proceedings of the International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU'98), Paris, France July 6-10, 1998*; 273-280.
- Kreinovich V, Longpre L, **Koshelev M**: Kolmogorov complexity, statistical regularization of inverse problems, and Birkhoff's formalization of beauty. *Ali Mohamad-Djafari (ed.), Bayesian Inference for Inverse Problems, Proceedings of the SPIE/International Society for Optical Engineering, Vol. 3459, San Diego, CA* 1998; 159-170.

Kreinovich V, Johnson-Holubec E, Reznik LK, **Koshelev M**: Cooperative learning is better: explanation using dynamical systems, fuzzy logic, and geometric symmetries. *Nguyen Hoang Phuong and Ario Ohsato (eds.), Proceedings of the Vietnam-Japan Bilateral Symposium on Fuzzy Systems and Applications VJFUZZY'98, HaLong Bay, Vietnam 30th September-2nd October 1998*; 154-160.

Koshelev M, Kreinovich V, Nguyen HT, Bouchon-Meunier B: Uncertainty representation explains and helps methodology of physics and science in general. *Nguyen Hoang Phuong and Ario Ohsato (eds.), Proceedings of the Vietnam-Japan Bilateral Symposium on Fuzzy Systems and Applications VJFUZZY'98, HaLong Bay, Vietnam 30th September-2nd October 1998*; 577-585.

Koshelev M, Longpre L, Taillibert P: Optimal Approximation of Quadratic Interval Functions. *Reliable Computing* 1998; 4:351-360.

Koshelev M: Towards The Use of Aesthetics in Decision Making: Kolmogorov Complexity Formalizes Birkhoff's Idea. *Bulletin of the European Association for Theoretical Computer Science (EATCS)* 1998; 66:166-170.

Auguston M, **Koshelev M**, Kosheleva O: Even for non-point events, causality implies the Lorentz group. *International Journal of Theoretical Physics* 1998; 37: 2851-2856.

Koshelev M, Kreinovich V, Rachamreddy B, Yasemis H, Atanassov KT: Fundamental Justification of Intuitionistic Fuzzy Logic and of Interval-Valued Fuzzy Methods. *Notes on Intuitionistic Fuzzy Sets (NIFS)* 1998; 4:42-46.

Koshelev M: Every Superinterval of the Function Range Can Be An Interval-Computations Enclosure. *The Chinese University of Hong Kong, Department of Mechanical & Automation Engineering, Technical Report CUHK-MAE-99-003* January 1999.

Kosheleva O, Cabrera SD, Gibson GA, **Koshelev M**: Fast implementations of morphological operations using Fast Fourier Transform (FFT). *Geoinformatics* 1999; 8: 86-92.

Koshelev M, Kreinovich V, Longpre L: Encryption Algorithms Made (Somewhat) More Natural (a pedagogical remark). *Bulletin of the European Association for Theoretical Computer Science (EATCS)* 1999; 67: 153-156.

Koshelev M: Interval Computations for Estimating the Value of a Function for Fuzzy Inputs: Theoretical Analysis of Possible Overestimations. *Proceedings of The Eighth International Fuzzy Systems Association World Congress IFSA'99, Taipei, Taiwan, August 17-20 1999*; 251-254.

Koshelev M, Kreinovich V, Longpre L: Encryption algorithms made natural. *Inroads: ACM SIGCSE Bulletin* 1999; 31: 50-51.

Koshelev M: Every superinterval of the function range can be an interval-computations enclosure. *Reliable Computing* 2000; 6: 219-223.

PRESENTATIONS

- 2008 Therapeutic application for a cell culture model of myotonic dystrophy
New Directions in Skeletal Muscle Biology, New Orleans, LA.
- 1995 Measuring Strong Currents by Their Magnetic Field: A New Method
SC-COSMIC, South Central Computational Sciences in Minority Institutions Consortium, First Student Conference in Computational Sciences, Houston, TX
- 1995 Testing Earthquake Damage Prevention Methods with Simulated Fractal Earthquakes
SC-COSMIC, South Central Computational Sciences in Minority Institutions Consortium, First Student Conference in Computational Sciences, Houston, TX
- 1996 Case Studies of Choosing a Numerical Differentiation Method under Uncertainty: Computer-Aided Design and Radiotelescope Network Design
SIAM Second International Workshop on Computational Differentiation, Santa Fe, NM
- 1996 How To Organize a World Wide Web Site
SC-COSMIC, South Central Computational Sciences in Minority Institutions Consortium, Second Student Conference in Computational Sciences, El Paso, TX
- 1997 Optimal Approximation of Quadratic Interval Functions.
NASA URC (University Research Center) Technical Conference, Albuquerque, NM
- 1997 Fixed Future and Uncertain Past: Theorems Explain Why It Is Often More Difficult To Reconstruct the Past Than to Predict the Future.
NASA URC (University Research Center) Technical Conference, Albuquerque, NM
- 1997 Towards Computers of Generation Omega – Non-Equilibrium Thermodynamics, Granularity, and Acausal Processes: A Brief Survey
International Conference on Intelligent Systems and Semiotics (ISAS'97), National Institute of Standards and Technology, Gaithersburg, MD
- 1997 How to make World Wide Web sites faster and easier to use
AAAI Symposium on Frontiers in Soft Computing and Decision Systems, Boston, MA
- 1997 We must choose the simplest physical theory: Levin-Li-Vitanyi theorem and its potential physical applications
The Seventeenth International Workshop on Maximum Entropy and Bayesian Methods, Boise, Idaho
- 1997 Maximum Entropy And Acausal Processes: Astrophysical Applications And Challenges
The Seventeenth International Workshop on Maximum Entropy and Bayesian Methods, Boise, Idaho

- 1998 Intervals (and More General Uncertainty Sets), Counterfactual Implication, 5-D Space-Time, and United Field Theory
International Conference on Interval Methods and their Application in Global Optimization (INTERVAL'98), Nanjing, China
- 1998 Intervals and Acausal Processes
International Conference on Interval Methods and their Application in Global Optimization (INTERVAL'98), Nanjing, China

TEACHING EXPERIENCE

- 2007 Teaching Assistant, Gene Regulation, Baylor College of Medicine
2000-2003 Tutor, Summit Educational Group, Inc.

GRANTS and FELLOWSHIPS

- 2008 NIH NRSA F30 NS061358-01
2001-2002 Harvard College Research Program Grant

EXTRACURRICULAR ACTIVITIES

- 2005-present MSTP Student Operating Committee
2003-2004 Member at Large, Baylor American/Texas Medical Association
2003-2004 Vice-President, Baylor American Medical Student Association
2003-2004 Member, Physicians for Human Rights

PROFESSIONAL ORGANIZATIONS

American Medical Association
American Medical Student Association
Physicians for Human Rights
Sigma Xi