Name	Yuliya Babenko
Title	Assistant Professor
Department	Mathematics and Statistics
College	Arts and Sciences

Degrees Earned

Degree, Major, (minor – optional), Institution, Year

PhD. Mathematics, Vanderbilt University, USA, August 2006
M.A. Mathematics, Vanderbilt University, USA, May 2003
M.S. Mathematics, Dnepropetrovsk National University, Ukraine, July 2001
B.S. Mathematics, Dnepropetrovsk State University, Ukraine, Sept. 2000

Professional Licensure and Certifications

N/A

Peer-Review Publications and Artistic Performances/Exhibitions

Articles

1. Yuliya Babenko, Exact asymptotics of the uniform error of interpolation by multilinear splines, submitted.
2. Yuliya Babenko, V. Babenko, A. Ligun, A. Shumeiko, On Asymptotical Behavior of the Optimal Linear Spline Interpolation Error of C_2 Functions, East Journal on Approximations, V. 12, N. 1 (2006), pp. 71 – 101.
3. Yuliya Babenko, A. Kroo, Markov-type inequalities for homogeneous polynomials on non symmetric star-like domains, Frontiers in Interpolation and Approximation, Taylor & Francis Group, USA, Editors N.K. Govil, H. N. Mhaskar, R. N. Mohaparta, Z. Nashed, J. Szbados, 2006, pp. 1–15.
4. Yuliya Babenko, V. Babenko, Kolmogorov Problem for Arbitrary Four Numbers on the Class of Multiply Monotone Functions, Constructive Approximation (2007) 26: pp. 83-92.
5. Yuliya Babenko, V. Babenko, The Kolmogorov Inequalities for Multiply Monotone Functions Defined on a Half-line, East Journal on Approximations, 11 (2005), no. 2, 169–186.
6. Yuliya Babenko, V. Babenko, The Olovyanishnikov Inequality for Multivariate Functions, Approximation Theory: A Volume Dedicated to Borislav Boyanov, Editors D. Dimitrov, G. Nikolov, R. Uluchev, Academic Publishing House, Sofia, 2004, pp. 20–32.
7. Yuliya Babenko, V. Babenko, The Kolmogorov Inequality for Absolutely Monotone Functions on a Half-Line, Advances in constructive approximation, Editors E. Saff and M. Neamtu, Mod. Methods Math., Nashboro Press, Brentwood, TN, 2004, pp. 63–74, Yuliya Babenko, V. Babenko, About Kolmogorov type inequalities for functions defined on a half line, Constructive theory of functions, 205–208, DARBA, Sofia, 2003.
8. Yuliya Babenko, Pointwise Inequalities of Landau-Kolmogorov Type for Functions Defined on a Finite Interval, Ukrainian Mathematical Journal, V.52, N.2, 2001, pp.

270–275.

9. Yuliya Babenko, Exact Inequalities of Landau Type for Functions with Second Derivatives from Orlich Spaces, Bulletin of Dnepropetrovsk National University, 2001.
10. Yuliya Babenko, E. Babenko, Correlative Relationship between Firmness and Microfirmness of Titanium Powders Received from Conversion Wastes, Bulletin of Dnepropetrovsk National University, 1999.

Books

Chapters

Proceedings

1. Yuliya Babenko, Asymptotics of the weighted uniform error of linear spline interpolation of C_2 functions and applications, accepted.

Artistic Performances

Artistic Exhibitions

Research Monographs and Technical Reports

Funded External Grants

SIAM Travel grant to attend the 6th International Congress on Industrial and Applied Mathematics, Zurich, Switzerland, July 16 - 20, 2007.

Peer-Review Presentations/Posters

Presentations at National and International Conferences
6th International Congress on Industrial and Applied Mathematics, Zurich, Switzerland, July 16 - 20, 2007.
On asymptotically optimal error of interpolation by linear and multilinear splines

On asymptoticaly optimal error of interpolation by linear and multilinear splines
Extremal Problems in Complex and Real Analysis, Moscow, Russia, May 22-26, 2007.
Estimates of norms of subsequent derivatives of r-monotone functions.

Meeting of the Texas Section of the MAA, Edinburg, TX, April 12-14, 2007.
Markov-type inequalities for homogeneous polynomials on nonsymmetric star-like domains.

Twelfth International Conference on Approximation Theory, San Antonio, Texas, March 4-8, 2007.
Asymptotically optimal choice of knots for interpolation and applications to numerical integration.

SIAM Conference on Geometric Design and Computing, October 31 – November 3, 2005
On Asymptotical Behavior of Optimal Error of Interpolation of C^2 Functions by Linear and Bilinear Splines.

International Conference on the Interactions between Wavelets and Splines, The University of Georgia, Athens, Georgia, May 16–19, 2005.
Asymptotically Optimal Triangulations for Linear Spline Interpolants of Piecewise C^2 Surfaces.

Functional Analysis and Approximation Theory, Maratea, Italy, June 16-23, 2004.
On existence of a function with prescribed norms of its derivatives.

Advances in Constructive Approximation, Vanderbilt, USA, May 2003
Inequalities of Kolmogorov Type for Special Classes of Functions.

3rd International Conference, Multivariate Approximation Theory and Applications Cancun, Mexico, April 2003
Olovyanishnikov Inequality for Multivarite Functions. (Poster)

Constructive Theory of Functions, Varna, Bulgaria, June 2002
About Kolmogorov Type Inequalities for Functions Defined on a Half Line.

International Conference on Functional Analysis and its Applications, Lviv, Ukraine, May 2002
Inequalities of Kolmogorov Type for r-Monotone Functions of Many Variables.

Interregional Conference on Computer Modeling, Dniprodzerzhinsk, 1999
Exact Inequalities of Landau Type for Functions with Second Derivatives from Orlich Spaces.

International Conference on Approximation Theory and its Applications dedicated to the Memory of V.K.Dzyadyk, Kyiv, 1999
Pointwise Inequalities of Landau-Kolmogorov Type for Functions Defined on a Finite Interval.

Invited Seminar / Colloquium Talks
Analysis of the error of adaptive spline interpolation
School of Mathematics, Tel Aviv University, Tel Aviv, Israel, December 2007.

Exact asymptotics of the error of adaptive spline interpolation

Seminar, Hohenheim University, Stuttgart, Germany, July 2007.
Colloquium, Institute of Biomathematics and Biometry, Munich, Germany, July 2007.

On asymptotically optimal methods of adaptive spline interpolation
Seminar in Approximation Theory, Texas A&M University, October 2006.
Colloquium, University of Houston-Downtown, October 2006.

On asymptotically optimal methods of adaptive spline interpolation,
Seminar in Applied Mathematics, University of Utah, September 2006.

Multivariate spline interpolation: asymptotically optimal methods, Seminar in Applied and Constructive Mathematics, Sam Houston State University, September 2006.

On the asymptotic behavior of the optimal error of spline interpolation of multivariate functions, PhD Thesis defense, Vanderbilt University, April 2006.

On asymptotically optimal methods of interpolation by linear and other types of splines, Industrial Mathematics Institute, University of South Carolina, USA, April 2006.

On asymptotically optimal methods of approximation by linear interpolating splines, Colloquium, University of Alabama, Huntsville, February 2006.

On asymptotically optimal partitions and the error of approximation by linear and bilinear splines, Computational Analysis Seminar, Vanderbilt University, February 2006.

On the error of interpolation of C^2 functions by linear splines, Colloquium, Sam Houston State University, January 2006.

On asymptotically optimal methods of approximation by linear and bilinear splines, Computational Analysis Seminar, Vanderbilt University, September 2005.

Exact asymptotics of the error of interpolation of piecewise C^2 surfaces by linear splines, University of Mannheim, Germany, July 2005.

Kolmogorov type inequalities for some special classes of functions, Hohenheim University, Stuttgart, Germany, July 2005.

Asymptotically optimal Triangulations for linear Spline Interpolants of Piecewise C^2 functions, INRIA Sophia Antipolis, France, July 2005

Kolmogorov type inequalities for some special classes of functions, INRIA Sophia Antipolis, France, July 2005

On existence of a function with prescribed norms of its derivatives, Computational Analysis Seminar, Vanderbilt University, November 2004.

Kolmogorov type inequalities for special classes of functions, qualifying paper defense, Vanderbilt University, May 2003.

Work or Professional Experiences

Assistant Professor (tenure-track), Sam Houston State University, 2006 - present

Graduate Student and Teaching Assistant, Vanderbilt University, 2001-2006

Intern, Laboratory of Computer Visualization, University of Georgia, Summer 2000

Engineer, Laboratory of Titanium, Dnepropetrovsk State University, 1999

Honors and Awards

University Graduate Honor Fellowship, Vanderbilt University, 2001-2005

U.S. Government Scholarship ACTR/ACCELS (American Councils for International Education), 1999

Other Competencies