Curriculum Vitae

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Education:

Ph.D. in Mathematics University of Sussex, England
M.S. in Applied Mathematics University of Waterloo, Canada
B.S. (honors) in Mathematics with a Minor in Physics University of Sussex, England

Professional Experience:

Professor (1989 – Present), Associate Professor (1986 – 1989), Department of Mathematics and Statistics, Mississippi State University (MSU)

Administrative Experience:

Head, Department of Mathematics and Statistics, (July 2007 – present),
Interim Head, Department of Mathematics and Statistics, (July 2006 – June 2007),
and (July – December 1998), MSU

Awards, Consulting and Honors:

A Research/Lecture Fulbright Award to the Department of Mathematics and Computer Science at the Technical University of Civil Engineering, Bucharest, Romania, October 2015–June 2016, entitled "Development and Applications of Polynomial Series, Orthogonal Functions, Wavelets, and Fractional Calculus in Engineering"

A Research/Lecture Fulbright Award to the Department of Mathematics and Computer Science at the Technical University of Civil Engineering, Bucharest, Romania, October 2011–June 2012, entitled "Orthogonal Functions and Wavelets in Dynamical Systems and Engineering"

The National Center for Academic Transformation (NCAT) Grant, Course Redesign of the Introduction to Statistics at MSU, (July 2008–June 2009)

Dean's Eminent Scholar of Mathematics from College of Arts and Sciences at MSU (October 2007)

NASA Grant through Remote Sensing Technologies Center (RSTC) at Mississippi State University, Remote Sensing of Soil Physico-Chemical Properties and their use in Agriculture and Environmental Applications, $507,737 (February 2001 – February 2004).

NASA Grant through Remote Sensing Technologies Center (RSTC) at Mississippi State University, Inverse Scattering Techniques for the Recovery of Spatially Varying Properties in Agriculture and Forestry, $102,845 (July 1999–November 2000).

MSU/IMAGE 1998 Teaching Award at the Spring 1998 Faculty Awards Banquet at Mississippi State University.

Consultant for Waterways Experiment Station, Vicksburg, MS, 1992-1995.

Refereed Journal Publications:

[1] *Fractional-order Legendre-Laguerre functions and their applications in fractional partial differential equations*, to appear in **Applied Mathematics and Computation** (with H. Dehestani, and Y. Ordokhani).

[2] *An approximate method for solving fractional optimal control problems by hybrid functions*, **Journal of Vibration and Control**, Vol. 24, 1621-1631, 2018 (with S. Mashayekhi).

[3] *An approximate method for solving fractional optimal control problems by hybrid of block-pulse functions and Taylor Polynomials*, **Optimal Control, Applications and Methods**, Vol. 32, 873–887, 2018 (with A. Rattana, and W. Yonthanthum).

[4] *Combined shearlet shrinkage and total variation minimization for image denoising*, **Iranian Journal of Science and Technology, Transaction A: Science**, Vol. 42, 31–37, 2018 (with M. Lakestani, and Z. Mousavi).

[5] *The Taylor wavelets method for solving the initial and boundary value problems of Bratu-type equations*, **Applied Numerical Mathematics**, Vol. 128, 205–216, 2018 (with N. Keshavarz, and Y. Ordokhani).

[6] *Cardinal Hermite interpolant multiscaling functions approach for nonlinear constrained optimal control problems*, **Asian Journal of Control**, Vol. 20, 558–567, 2018 (with E. Ashpazzadeh, and M. Lakestani).

[7] *Solutions of the Blasius and MHD Falkner-Skan boundary-layer equations by modified rational Bernoulli functions*, **International Journal of Numerical Methods for Heat and Fluid Flow**, Vol. 27, 1687-1705, 2017 (with V. Calvert).

[8] *Cardinal Hermite interpolant multiscaling functions for solving a parabolic inverse problem*, **Turkish Journal of Mathematics**, Vol. 41, 1009–1026, 2017 (with E. Ashpazzadeh, and M. Lakestani).

[9] *Numerical solutions of fractional differential equations by using fractional Taylor basis*, **IEEE/CAA Journal of Automatica Sinica**, Vol. 4, 98–106, 2017 (with V.S. Krishnasamy, and S. Mashayekhi).

[10] *A numerical solution for fractional optimal control problems via Bernoulli polynomials*, **Journal of Vibration and Control**, Vol. 22, 3889–3903, 2016 (with N. Keshavarz, and Y. Ordokhani).

[11] *Solution of Lane-Emden type equations using rational Bernoulli functions*, **Mathematical Methods in the Applied Sciences**, Vol. 39, 1268–1284, 2016 (with V. Calvert and S. Mashayekhi).

[12] *Numerical solution of distributed order fractional differential equations by hybrid functions* **Journal of Computational Physics**, Vol. 315, 169–181, 2016 (with S. Mashayekhi).

[13] *The Numerical Solution of the Bagley-Torvik Equation by using hybrid functions approximation* **Mathematical Methods in the Applied Sciences**, Vol. 39, 353–365, 2016 (with S. Mashayekhi).

[14] *Numerical solution of the fractional Bagley-Torvik equation with Fractional Taylor Method* **Journal of Computational and Nonlinear Dynamics**, Vol. 11, 1–6, 2016 (with V.S. Krishnasamy).

[15] *Analysis of multi-delay and piecewise constant delay systems by hybrid functions approximation*, **Differential Equations and Dynamical Systems**, Vol. 24, 1–20, 2016 (with S. Mashayekhi, and M. Wattanataweekul).

[16] *Sparse representation of system of Fredholm integro-differential equations by using Alpert multiwavelets*, **Computational Mathematics and Mathematical Physics**, Vol. 59, 1468–1483, 2015 (with B. Nemati-Saray and M. Lakestani).

[17] *Numerical solution of nonlinear fractional integro-differential equations by hybrid functions*, **Engineering Analysis with Boundary Elements**, Vol. 56, 81–89, 2015 (with S. Mashayekhi).

[18] *Hybrid functions approach for variational problems and optimal control of delay systems*, **Studies in Systems, Decision and Control**, Vol. 27, 67–88, 2015.

[19] *Bernoulli wavelet operational matrix of fractional order integration and its applications in solving the fractional order differential equations*, **Applied Mathematical Modelling**, Vol. 38, 6038–6051, 2014 (with N. Keshavarz, and Y. Ordokhani).

[20] *A combined adaptive control parameterization and homotopy continuation technique for the numerical solution of bang-bang optimal control problems*, **The Australian and New Zealand Industrial and Applied Mathematics (ANZIAM) Journal**, Vol. 56, 48–65, 2014 (with M. A. Mehrpouya, M. Shamsi).

[21] *Solution of the nonlinear mixed Volterra-Fredholm integral equations by hybrid of block-pulse functions and Bernoulli polynomials*, **The Scientific World Journal**, Vol. 2014, 1-9, 2014 (with S. Mashayekhi and O. Tripak).

[22] *A Taylor series method for the solution of the linear initial boundary-value problems for partial differential equations*, **Computers and Mathematics with Applications**, Vol. 66, 1329–1343, 2013 (with G. Groza).

[23] *A hybrid functions approach for Duffing equation*, **Physica Scripta**, Vol. 8, 1–8, 2013 (with S. Mashayekhi and Y. Ordokhani).

[24] *Hybrid functions approach for optimal control of systems described by integro-differential equations*, **Applied Mathematical Modelling**, Vol. 37, 3355–3368, 2013 (with S. Mashayekhi and Y. Ordokhani).

[25] *Optimal control of delay Systems by using a hybrid functions approximation*, **Journal of Optimization Theory and Applications**, Vol. 153, 338-356, 2012 (with N. Haddadi and Y. Ordokhani).

[26] *Hybrid functions approach for nonlinear constrained optimal control problems*, **Communications in Nonlinear Science and Numerical Simulation**, Vol. 17, 1831–1843, 2012 (with S. Mashayekhi and Y. Ordokhani).

[27] *Direct method for variational problems by hybrid of block-pulse and Bernoulli polynomials*, **Romanian Journal of Mathematics and Computer Science**, Vol. 2, 1–17, 2012 (with N. Haddadi and Y. Ordokhani).

[28] *A composite collocation method for the nonlinear mixed Volterra-Fredholm-Hammerstein integral equations*, **Communications in Nonlinear Science and Numerical Simulation**, Vol. 16, 1186–1194, 2011 (with H. Marzban and H.R. Tabrizidooz).

[29] *Numerical iterative method for Volterra equations of the convolution type*, **Mathematical Methods in the Applied Sciences**, Vol. 34, 140–146, 2011 (with J. Simsiriwong and R.W. Sullivan).

[30] *Rationalized Haar approach for nonlinear constrained optimal control problems*, **Applied Mathematical Modelling**, Vol. 34, 174–183, 2010 (with H. Marzban).

[31] *The pseudospectral Legendre method for a class of singular boundary value problems arising in physiology*, **Journal of Vibration and Control**, Vol. 16, 3–10, 2010 (with A. Alipanah and M. Dehghan).

[32] *Solution of the generalized Emden-Fowler equations by hybrid functions method*, **Physica Scripta**, Vol. 80, 1–6, 2009 (with H. Marzban and H.R. Tabrizidooz).

[33] *Solution of variational problems via hybrid of block-pulse functions and Lagrange interpolating polynomials*, **IET Control Theory & Applications**, Vol. 3, 1363–1370, 2009 (with H. Marzban and H.R. Tabrizidooza).

[34] *Optimization of time delay systems by hybrid functions*, **Optimization and Engineering**, Vol. 10, 363–376, 2009.

[35] *Solution of multi-delay systems via combined block-pulse functions and Legendre polynomials*, **An. Stiint. Univ. "Ovidius" Constanta Ser.**, Constanta, Romania, Vol. 17, 223–232, 2009.

[36] *Solution of Volterra population model via block-pulse functions and Lagrange-interpolating polynomials*, **Mathematical Methods in the Applied Sciences**, Vol. 32, 127–134, 2009 (with S.M. Hoseini and H. Marzban).

[37] *Hybrid functions for nonlinear initial-value problems with applications to Lane-Emden type equations*, **Physics Letters A**, Vol. 372, 5883–5886, 2008 (with H. Marzban and H.R. Tabrizidooz).

[38] *Numerical solution of the one-dimensional heat equation on the bounded intervals using fundamental solutions*, **Numerical Methods for Partial Differential Equations**, Vol. 24, 911–923, 2008 (with M. Dehghan and M. Tatari).

[39] *Analysis of time-varying singular bilinear systems by hybrid functions*, **International Journal of Systems Science**, Vol. 39, 229–235, 2008 (with H. Marzban and M. Shafiee).

[40] *Global behavior of the difference Equation* $x_{n+1} = \frac{x_{n-l+1}}{1+a_0x_n+a_1x_{n-1}+\cdots+a_lx_{n-1}+a_lx_{n-l+1}}$, **Chaos, Solitons & Fractals**, Vol. 35, 543–549, 2008 (with M. Dehghan and M.J. Douraki).

[41] *Solution of nonlinear Volterra-Fredholm-Hammerstein integral equations via a collocation method and rationalized Haar functions*, **Applied Mathematics Letters**, Vol. 24, 4–9, 2008 (with Y. Ordokhani).

[42] *Combined finite difference and spectral methods for the numerical solution of hyperbolic equation with an integral condition*, **Numerical Methods for Partial Differential Equations**, Vol. 24, 1–8, 2008 (with M. Dehghan and M. Ramezani).

[43] *Modified rational Legendre approach to laminar viscous flow over a semi-infinite flat plate*, **Chaos, Solitons & Fractals**, Vol. 35, 59–66, 2008 (with M. Dehghan and T. Tajvidi).

[44] *Nonclassical pseudospectral method for the solution of brachistochrone problem*, **Chaos, Solitons & Fractals,** Vol. 34, 1622–1628, 2007 (with A. Alipanah and M. Dehghan).

[45] *Two-dimensional Legendre wavelets method for the mixed Volterra-Fredholm integral equations*, **Journal of Vibration and Control**, Vol. 13, 1667–1675, 2007 (with E. Banifatemi and S. Yousefi).

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[47] *The numerical solution of third-order boundary value problems using Sinc-collocation method*, **Communications in Numerical Methods in Engineering**, Vol. 5, 681–689, 2007 (with A. Saadatmandi).

[48] *Application of the Adomian decomposition method for the Fokker–Planck equation*, **Mathematical and Computer Modelling**, Vol. 45, 639–650, 2007 (with M. Dehghan and M. Tatari).

[49] *Determination of a time-dependent parameter in a one-dimensional quasi-linear parabolic equation with temperature overspecification*, **International Journal of Computer Mathematics**, Vol. 83, 905–913, 2006 (with M. Dehghan and M. Tatari).

[50] *Numerical solution of linear time-varying differential equations using the hybrid of block-pulse and rationalized Haar Functions*, **Journal of Vibration and Control**, Vol. 12, 1081–1092, 2006 (with B. Arabzadeh and Y. Ordokhani).

[51] *Numerical solution of the controlled Duffing oscillator by semi-orthogonal spline wavelets*, **Physica Scripta**, Vol. 74, 362–366, 2006 (with M. Dehghan and L. Lakestani).

[52] *Oscillation and asymptotic behavior of a class of higher order nonlinear recursive sequences*, **Applied Mathematics and Computation**, Vol. 179, 175–189, 2006 (with M. Dehghan and M. Douraki).

[53] *Global stability of a higher order rational recursive sequence*, **Applied Mathematics and Computation**, Vol. 179, 161–174, 2006 (with M. Dehghan and M. Douraki).

[54] *Solution of multi-delay systems using hybrid of block-pulse functions and Taylor Series*, **Journal of Sound and Vibration**, Vol. 292, 954–963, 2006 (with H. Marzban).

[55] *Semi orthogonal spline wavelets approximation for Fredholm integro–differential equations*, **Mathematical Problems in Engineering**, Vol. 2006, 1–12, 2006 (with M. Dehghan and M. Lakestani).

[56] *On the higher order rational recursive sequence* $x_n = \frac{A}{x_n - k} + \frac{B}{x_n - 3k}$, **Applied Mathematics and Computation**, Vol. 173, 710–723, 2006 (with M. Dehghan and M. Douraki).

[57] *Sinc-Galerkin solution for nonlinear two-point boundary value problems with applications to chemical reactor theory*, **Mathematical and Computer Modelling**, Vol. 42, 1237–1244, 2005 (with M. Dehghan and A. Saadatmandi).

[58] *Analysis of time-delay systems via hybrid of block-pulse functions and Taylor series*, **Journal of Vibration and Control**, Vol. 11, 1455–1466, 2005 (with H. Marzban).

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[61] *Linear quadratic optimal control problems with inequality constraints via rationalized Haar functions*, **Dynamics of Continuous, Discrete and Impulsive Systems**, Vol. 12, 761–773, 2005 (with Y. Ordokhani).

[62] *Legendre wavelets method for the nonlinear Volterra-Fredholm integral equations*, **Mathematics and Computers in Simulation**, Vol. 70, 1–8, 2005 (with S. Yousefi).

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[74] *Solution of time-varying delay systems by hybrid functions*, **Mathematics and Computers in Simulation**, Vol. 64, 597–607, 2004 (with H. Marzban).

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[81] *State analysis of time-varying singular nonlinear systems by single-term Walsh series*, **International Journal of Computer Mathematics**, Vol. 80, 413–418, 2003 (with B. Sepehrian).

[82] *A discrete bidirectional reflectance model in remote sensing*, **Journal of Quantitative Spectroscopy & Radiative Transfer**, Vol. 77, 335–343, 2003 (with F. Ahmad and S. Oppenheimer).

[83] *A Legendre wavelets method for the radiative transfer equation in remote sensing*, **Journal of Electromagnetic Waves and Applications**, Vol. 16, 1681–1693, 2002 (with F. Ahmad and S. Oppenheimer).

[84] *A rationalized Haar functions method for nonlinear Fredholm-Hammerstein integral equations*, **International Journal of Computer Mathematics**, Vol. 79, 333–343, 2002 (with Y. Ordokhani).

[85] *Sine-cosine wavelets operational matrix of integration and its applications in the calculus of variations*, **International Journal of Systems Science**, Vol. 33, 805–810, 2002 (with S. Yousefi).

[86] *Legendre wavelets method for constrained optimal control problems*, **Mathematical Methods in the Applied Sciences**, Vol. 25, 529–539, 2002 (with S. Yousefi).

[87] *Optimal control of singular systems via piecewise linear polynomial functions*, **Mathematical Methods in the Applied Sciences**, Vol. 25, 399–408, 2002 (with H. Marzban).

[88] *Hybrid functions in the calculus of variations*, **Cubo Mathematica Educational**, Vol. 4, 297–317, 2002 (with H. Marzban).

[89] *Tau method approximation for radiative transfer problems in a slab medium*, **Journal of Quantitative Spectroscopy & Radiative Transfer**, Vol. 72, 439–447, 2002 (with F. Ahmad and S. Oppenheimer).

[90] *Solution for a classical problem in the calculus of variations via rationalized Haar functions*, **Kybernetika**, Vol. 37, 575–583, 2001 (with Y. Ordokhani).

[91] *A hybrid domain analysis for systems with delays in state and control*, **Mathematical Problems in Engineering**, Vol. 7, 337–353, 2001 (with H. Marzban).

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[93] *An application of rationalized Haar functions for variational problems*, **Applied Mathematics and Computation**, Vol. 122, 353–364, 2001 (with Y. Ordokhani).

[94] *Numerical solution of radiative transfer problems in a slab medium by Galerkin-type approximation techniques*, **Physica Scripta**, Vol. 64, 97–101, 2001 (with F. Ahmad and S. Oppenheimer).

[95] *Solution of differential equations via rationalized Haar functions*, **Mathematics and Computers in Simulation**, Vol. 56, 235–246, 2001 (with Y. Ordokhani).

[96] *Legendre wavelets method for the solution of nonlinear problems in the calculus of variations*, **Mathematical and Computer Modelling**, Vol. 34, 45–54, 2001 (with S. Yousefi).

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[100] *Numerical method for analysis of Time–varying singular systems*, **IEE Control Theory and Applications**, Vol. 147, 403–407, 2000 (with F. Ahmad).

[101] *Direct method for variational problems via hybrid of block-pulse and Chebyshev functions*, **Mathematical Problems in Engineering**, Vol. 6, 85–97, 2000 (with H. Marzban).

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[103] *A collocation method for the solution of an inverse scattering problem from gradient-type interfaces*, **Physica Scripta**, Vol. 61, 468–471, 2000 (with F. Ahmad).

[104] *Reconstruction of permittivity profiles through a transformation of the differential equation for the reflection coefficient*, **Journal of Electromagnetic Waves and Applications**, Vol. 13, 757–765, 1999 (with F. Ahmad).

[105] *A pseudospectral technique for the discrete reconstruction of the three dimensional equivalent–current density*, **IEEE Transactions on Microwave Theory**, Vol. 47, 798–802, 1999 (with F. Ahmad).

[106] *Optimal control of singular systems via Legendre series*, **International Journal of Computer Mathematics**, Vol. 70, 241–250, 1998 (with M. Shafiee).

[107] *On the approximation to the permittivity profile of an inhomogeneous dielectric slab*, **Journal of Electromagnetic Waves and Applications**, Vol. 12, 713–722, 1998 (with F. Ahmad).

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[109] *A collocation method for optimal control of linear systems with inequality constraints*, **Mathematical Problems in Engineering**, Vol. 3, 503–515, 1998 (with J. Nazarzadeh and K. Nikravesh).

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[111] *A numerical solution to the Gel'Fand- Levitan-Marchenko equation*, **Applied Mathematics and Computation**, Vol. 89, 31–39, 1998 (with F. Ahmad).

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[113] *Solution of the matrix Riccati equation for the linear quadratic control problems*, **Mathematical and Computer Modeling**, Vol. 27, 51–55, 1998 (with J. Nazarzadeh and K. Nikravesh).

[114] *Analysis of linear distributed parameter systems via double Fourier series*, **Applied Mathematics and Computation**, Vol. 87, 205–215, 1997 (with A. Arabshahi and S.F. Lin).

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[146] *Instabilities in the solution of a heat conduction problem using Taylor series and alternative approaches*, **Journal of the Franklin Institute**, Vol. 326, 683–690, 1989 (with M. Razzaghi).

[147] *Solution of linear two–point boundary value problems with time–varying coefficients via Taylor series*, **International Journal of Systems Science**, Vol. 20, 2975–2984, 1989 (with M. Razzaghi).

[148] *Analysis of linear time–varying systems and bilinear systems via Fourier series*, **International Journal of Control**, Vol. 50, 889–898, 1989 (with A. Arabshahi).

[149] *Functional approximation for inversion of Laplace transforms via polynomial series*, **International Journal of Systems Science**, Vol. 20, 1131–1139, 1989 (with M. Razzaghi).

[150] *Taylor series analysis of time-varying multi-delay systems*, **International Journal of Control**, Vol. 50, 183–192, 1989 (with M. Razzaghi).

[151] *Optimal control of linear distributed–parameter systems via polynomial series*, **International Journal of Systems Science**, Vol. 20, 1141–1148, 1989 (with A. Arabshahi).

[152] *Shifted-Jacobi series direct method for variational problems*, **International Journal of Systems Science**, Vol. 20, 1119–1129, 1989 (with M. Razzaghi).

[153] *Solutions of linear two-point boundary value problems via polynomial series*, **International Journal of Systems Science**, Vol. 20, No. 3, 375–384, 1989 (with A. Arabshahi).

[154] *Taylor series direct method for variational problems*, **Journal of the Franklin Institute**, Vol. 325, 125–131, 1988 (with M. Razzaghi).

[155] *Fourier series direct method for variational problems*, **International Journal of Control**, Vol. 48, 887–895, 1988 (with M. Razzaghi).

[156] *Least-square determination of inversion of Laplace transform via Taylor series*, **Electronics Letters**, Vol. 24, 215–216, 1988 (with M. Razzaghi).

[157] *Solution of the non symmetric matrix Riccati equation in invariant embedding methods*, **Current Trends in Matrix Theory**, 267–271, 1987.

[158] *A pole assignment technique for multivariable systems with input delay*, **Kybernetica**, Vol. 22, 368–371, 1986.

[159] *A computational solution for the matrix Riccati equation using Laplace transforms*, **International Journal of Computer Mathematics**, Vol. 11, 297–304, 1986.

[160] *A computational solution for a matrix Riccati differential equation*, **Numerische Mathematik**, Vol. 32, 271–279, 1986.

Refereed Conference Proceedings:

[1] *An approximate method for solving a vibration equation involving fractional derivatives,* **AVMS 2017, Springer Proceeding in Physics 198**, Springer Verlag, Heidelberg, 13–19, 2017.

[2] *Hybrid functions for nonlinear differential equations with applications to physical problems*, **NAA 2012, Lecture Notes in Computer Science 8236**, Springer Verlag, Heidelberg, 86–94, 2013.

[3] *Orthogonal functions and hybrid approximations for variational problems*, **Proceedings of the 4th International Congress of Serbian Society of Mechanics**, Vrnjacka Banja, Serbia, 81–93, 2013.

[4] *Solution for population model via combined block-pulse functions and Bernoulli polynomials*, **Proceedings of the FAIM 2012, 22nd International Conference on Flexible Automation and Intelligent Manufacturing**, Helsinki, Finland, 989–998, 2012.

[5] *Solution of multi-delay systems via combined block-pulse functions and Legendre polynomials*, **An. Stiint. Univ. "Ovidius" Constanta Ser.**, Constanta, Romania, Vol. 17, 223–232, 2009.

[6] *Solution of optimal control problems with time-delay*, **International Conference on Innovations in Information Technology co-sponsored by IEEE Communication Society**, Al Ain, United Arab Emirates, Article number 4781648, 97–100, 2008.

[7] *Optimal control of linear delay systems via combined piecewise and continuous basis functions*, **Proceedings of the International Symposium on Intelligent Automation and Control, World Automation Congress**, Waikoloa, Hawaii, Article number 4699020, 2008.

[8] *On the applications of orthogonal functions in the mathematical modeling of biological processes*, **Proceedings of the International Conference on Mathematical Biology, in Proceedings of the American Institute of Physics (AIP)**, Kuala Lumpur, Malaysia, Vol. 971, 285–292, 2007.

[9] *Numerical methods for variational problems by hybrid functions*, **Proceedings of the International Conference on Trends and Challenges in Applied Mathematics**, Bucharest, Romania, 86–92, 2007.

[10] *A numerical technique for gradient-type interface in the inverse scattering problems*, **Proceedings of the International Society for Optical Engineering (SPIE), Europe Symposium on Optics and Photonics**, Stockholm, Sweden, Vol. 6396, Article number 639601, 2006.

[11] *On the applications of orthogonal functions in pattern recognition*, **Proceedings of the International Society for Optical Engineering (SPIE), Symposium on Modeling, Signal Processing, and Control**, San Diego, California, 543–552, 2005.

[12] *Applications of wavelets in the study of input to models in remote sensing*, **Proceedings of the International Symposium on Remote Sensing of Environment**, Hawaii, 2003.

[13] *On the Application of hybrid functions for Radiative Transfer Problems*, **Proceedings of the American Society of Photogrammetry and Remote Sensing (ASPRS) 2003 Annual Meeting**, Alaska, 2003 (with S. Oppenheimer).

[14] *On the application of wavelets in remote sensing*, **Proceedings of 3ECPA, the European Conference on Precision Agriculture**, Montpelier, France, 289–293, 2001.

Plenary/Invited Speaker at Conferences:

[1] *Hybrid functions in fractional calculus and optimal control problems*, **International Conference on Advance Engineering–Theory and Applications (AETA) 2017**, Ton Duc Thang University, Ho Chi Minh City, Vietnam, December 6-10, 2017.

[2] *Orthogonal functions and hybrid approximations in engineering problems*, **International Conference on Applied Sciences**, Hunedoara, Romania, May 10-12, 2017.

[3] *Numerical methods for fractional calculus in pattern recognition*, **The 3rd International Scientific Conference SEA-CONF 2017**, Constanta, Romania on 18-20 May, 2017.

[4] *An approximate method for solving a vibration equation involving fractional derivatives ,* **Acoustics and Vibration of Mechanical Structures**, Timisoara, Romania, May 25-26, 2017.

[5] *Environmental management and mathematical modelling*, **The 6th International Conference on Innovation, Knowledge, and Management**, Phuket, Thailand, June 17–19, 2017.

[6] *Hybrid Orthogonal functions in electronics problems*, **The 6th International Conference on Electronics, Communications and Networks(CECNet 2016)**, Macau, China, December 11–14, 2016.

[7] *Orthogonal functions and hybrid approximations in the calculus of variations and control theory*, **The 15th International Conference on Applied Mathematics**, Cluj-Napoca, Romania, July 5–7, 2016.

[8] *An efficient technique for the solution of fractional ordinary differential equations*, **The 12th International Conference on Approximation Theory and its Applications**, Sibiu, Romania, May 26–29, 2016.

[9] *Orthogonal functions and polynomial series for calculus of variations and its applications to physical problems*, **Timisoara Physics Conference (TIM 2014)**, Timisoara, Romania, November 20–22, 2014.

[10] *Instabilities in the solution of engineering problems by using polynomial series and other approaches*, **International Symposium on Stability, Vibration, and Control of Machines and Structures (SVCS 2014)**, Belgrade, Serbia, 4–6 July 2014.

[11] *Orthogonal functions and hybrid approximations for calculus of variations problems*, **The 7th Asian Conference on Fixed Theory and Optimization**, Nakhon Pathom, Thailand, 18–20 July 2013.

[12] *Orthogonal and hybrid functions for solution of variational problems*, **The 4th International Congress of Serbian Society of Mechanics,** Vrnjacka Banja, Serbia, 4–7 June 2013.

[13] *A hybrid approximation method for optimal control problem*, **International Conference on Mathematics and its Applications (ICMA 2012)** Timisoara, Romania, 1–3 November 2012.

[14] *Hybrid functions for nonlinear differential equations with applications to physical problems*, **The 5th Conference on Numerical Analysis and Applications**, Lozenetz, Bulgaria, 15–20 June 2012.

[15] *Numerical methods for variational problems by hybrid functions*, **International Conference on Trends and Challenges in Applied Mathematics**, Bucharest, Romania, 15–20 June 2007.

Research Seminars Presented:

[1] Presented a series of seminars entitled, *Applications of polynomial series and hybrid functions in fractional calculus*, **Department of Mathematics and Statistics, Prince of Songkla University**, Hat Yai, Thailand, June 1–16, 2016.

[2] Presented a series of seminars entitled, *Applications of wavelets and hybrid functions in fractional calculus*, **Department of Mathematics, University of Ruse**, Ruse, Bulgaria, May 16-24, 2016.

[3] *Direct method for the calculus of variations problems by using orthogonal functions and Taylor series*, **Department of Mathematics, University of Alba Ilulia**, Alba Ilulia, Romania, April 26, 2016.

[4] *Hybrid functions and Taylor series in dynamical systems*, **Department of Mathematics and Computer Science, University of Bucharest**, Bucharest, Romania, April 22, 2016.

[5] *Solutions of fractional initial and boundary-value problems by fractional Taylor series*, **Department of Mathematics, Polytechnica University of Timisoara**, Timisoara, Romania, April 21, 2016.

[6] *Orthogonal functions and Taylor series for optimization problems*, **Faculty of Mathematics, West University of Timisoara**, Timisoara, Romania, April 18, 2016.

[7] *Numerical solutions for the calculus of variations problems by Taylor series and hybrid functions*, **Department of Mathematics, University of Oradea**, Oradea, Romania, March 9, 2016.

[8] Presented a series of seminars entitled, *Development and applications of Bernoulli polynomials, Taylor series, and hybrid functions in fractional calculus*, **Department of Mathematics, University of West Bohemia**, Pilsen, Czech Republic, February 21 – 27, 2016.

[9] *Taylor series and orthogonal functions for variational problems*, **Department of Mathematics and Informatics, University of Lucian Blaga**, Sibiu, Romania, January 27, 2016.

[10] *Solutions of fractional differential equations by Bernoulli series*, **Faculty of Mathematics, University of Alexandru Ioan Cuza**, Iasi, Romania, December 2, 2015.

[11] *Application of the operational matrices of fractional polynomial series to fractional differential equations*, **Department of Mathematics, Petroleum and Gas University**, Ploiesti, Romania, November 24, 2015.

[12] *Taylor series approach for solving fractional differential equations*, **Department of Mathematics and Computer Science, Technical University of Civil Engineering**, Bucharest, Romania, November 18, 2015.

[13] *Taylor series approach to fractional calculus: An overview*, **Department of Mathematics and Informatics, The Naval Academy "Mircea cel Batran,"** Constanta, Romania, November 17, 2015.

[14] *Numerical solution of fractional differential equations by using fractional Taylor series*, **Department of Mathematics, Technical University of Cluj-Napoca**, Cluj-Napoca, October 21, 2015.

[15] Presented a series of seminars entitled, *Legendre Wavelets for Control Problems with Constraits*, **Department of Mathematics and Statistics, Prince of Songkla University**, Hat Yai, Thailand, July 8-10, 2015.

[16] *On the Applications of Orthogonal Functions, Hybrid Approximations, and Legendre Wavelets for Calculus of Variations and Control Problems*, **Department of Mathematics, Chaing Mai University**, Chaing Mai, Thailand, August 6 and 7, 2013.

[17] Presented a series of seminars entitled, *Orthogonal Functions, Hybrid Approximations, and Legendre Wavelets for Calculus of Variations and Control Problems, An Overview*, **Department of Mathematics and Statistics, Prince of Songkla University**, Hat Yai, Thailand, July 21-23, 2013.

[18] *Orthogonal Functions and Wavelets approximations for Control Problems*, **Department of Mathematics, Statistics and Computer Science, Ubon Ratchatathani University**, Ubon Ratchatathani, Thailand, July 11, 2013.

[19] *Orthogonal Polynomials and Hybrid Functions for Control Problems*, **Department of Mathematics, University of Belgrade**, Belgrade, Serbia, June 11, 2013.

[20] *Hybrid Functions and Legendre Wavelets in Calculus of Variations*, **Department of Mathematics, University of Novi Sad**, Novi Sad, Serbia, June 10, 2013.

[21] *Wavelets in Optimization Problems*, **Department of Mathematics and Informatics, Naval Academy "Mircea cel Batran,"** Constanta, Romania, June 6, 2012.

[22] *Polynomial Series in Optimization Problems*, **Faculty of Science, "Vasile Alecsandri" the University of Bacau**, Bacau, Romania, May 31, 2012.

[23] *Combined Orthogonal Functions and Legendre Wavelets in Dynamical Systems*, **Faculty of Mathematics and Informatics, Transilvania University of Brasov**, Brasov, Romania, May 29, 2012.

[24] *Legendre Wavelets and Orthogonal Functions in Calculus of Variations*, **Department of Mathematics, "Politehnica" University of Timisoara**, Timisoara, Romania, May 24, 2012.

[25] *Polynomial Series and Wavelets in Control Problems*, **Institute of Physical Chemistry**, Bucharest, Romania, May 21, 2012.

[26] *Direct Methods for Calculus of Variations via Orthogonal Functions and Wavelets*, **Department of Mathematics, Technical University of Cluj-Napoca**, Cluj, Romania, May 8, 2012.

[27] *Hybrid Functions and Wavelets in Control Problems*, **National Institute of Physics and Nuclear Engineering**, Bucharest, Romania, February 1, 2012.

[28] *Wavelets and Combined Piecewise and Continuous Orthogonal Functions for Optimization Problems*, **Department of Mathematics and Computer Science, University**, Bucharest, Romania, January 31, 2012.

[29] *Orthogonal Functions and Wavelets in Calculus of Variations and Control Problems*, **Institute of Mathematics of the Romanian Academy (IMAR)**, Bucharest, Romania, January 18, 2012.

[30] *Orthogonal and Hybrid Functions in Dynamical Systems*, **Department of Mathematics and Computer Science, Technical University of Civil Engineering "Gheorghe Asachi,"** Iasi, Romania, November 17, 2011.

[31] *Hybrid Functions of Block-Pulse and Bernoulli Polynomials and Their Applications*, **Department of Mathematics and Computer Science, Technical University of Civil Engineering**, Bucharest, Romania, November 2, 2011.

[32] *Solution of Variational Problems by Orthogonal Functions Approximation*, **Department of Mathematics and Computer Science, Technical University of Civil Engineering**, Bucharest, Romania, October 19, 2011.

Papers Presented At Professional Meetings:

[1] *An approximate method for solving fractional differential equations*, **Joint Mathematics Meeting of American Mathematical Society (AMS) with Mathematical Association of America (MAA)**, San Diego, CA, January 2018.

[2] *Solution of fractional differential equations by polynomial series*, **Joint Mathematics Meeting of AMS with MAA**, Atlanta, Georgia, January 2017.

[3] *Taylor series, and hybrid functions approximations for dynamical systems*, **Joint Mathematics Meeting of AMS with MAA**, Seattle, Washington, January 2016.

[4] *Orthogonal functions for problems in advanced sensor systems*, **International Conference on Photonics Solutions**, Petchburi, Thailand, July 2015.

[5] *Taylor series and hybrid approximations for control problems*, **Fifth Serbian Congress on Theoretical and Applied Mechanics**, Arandjelovac, Serbia, June 2015.

[6] *Polynomial series direct method for problems in the calculus of variations*, **Joint Mathematics Meeting of AMS with MAA**, San Antonio, Texas, January 2015.

[7] *Solution of delay systems in optimization problems by hybrid functions*, **Joint Mathematics Meeting of AMS with MAA**, Baltimore, Maryland, January 2014.

[8] *Hybrid functions approach for optimal control problems*, **Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering**, Boston, Massachusetts, March 2013.

[9] *Solution of variational problems by using a hybrid functions approximation,* **Joint Mathematics Meeting of AMS with MAA**, San Diego, California, January 2013.

[10] *Solution for population model via combined block-pulse functions and Bernoulli Polynomials*, **The 22nd International Conference on Flexible Automation and Intelligent Manufacturing (FAIM 2012)**, Helsinki, Finland, June 2012.

[11] *Solution of optimal control problems via combined block-pulse functions and polynomial series*, **Joint Mathematics Meeting of AMS with MAA**, Boston, Massachusetts, January 2012.

[12] *Direct method for calculus of variations problems via combined block-pulse functions and orthogonal functions*, **SIAM Conference on Computational Science and Engineering (CSE11)**, Reno, Nevada, March 2011.

[13] *Numerical solution for nonlinear differential equations via combined block-pulse and orthogonal functions*, **Joint Mathematics Meeting of AMS with MAA**, New Orleans, Louisiana, January 2011.

[14] *Solution for nonlinear initial-value problems via orthogonal functions*, **Joint Mathematics Meeting of AMS with MAA**, San Francisco, California, January 2010.

[15] *Solution of Multi-Delay Systems via Combined Block–Pulse Functions and Legendre Polynomials*, **The 5^{th} International Conference on Dynamical Systems and Applications**, Constanta, Romania, June 2009.

[16] *A Numerical Solution for a Nonlinear Integro-Differential Equation in a Population Model*, **Joint Mathematics Meeting of AMS with MAA**, Washington, District of Columbia, January 2009.

[17] *Solution of Optimal Control Problems with Time-Delay*, **The 5^{th} International Conference on Innovations in Information Technology co-sponsored by IEEE Communication Society**, Al Ain, United Arab Emirates, December 2008.

[18] *Optimal Control of Linear Delay Systems via Combined Piecewise and Continuous Basis Functions*, **International Symposium on Intelligent Automation and Control**, Waikoloa, Hawaii, September 2008.

[19] *Optimal Control Problems with Inequality Constraints via Hybrid Functions*, **International Conference on Mathematical Inequalities and Applications**, Trogir, Croatia, June 2008.

[20] *Hybrid Functions Approach for the Solution of Non-linear Problems in the Calculus of Variations*, **Joint Mathematics Meeting of AMS with MAA**, San Diego, California, January 2008.

[21] *Solution of Partial Differential Equations by Hybrid Functions*, **Fourth Pacific Rim Conference on Mathematics**, City University of Hong Kong, Hong Kong, December 2007.

[22] *On the Applications of Orthogonal Functions in the Mathematical Modeling of Biological Processes*, **International Conference on Mathematical Biology**, Kuala Lumpur, Malaysia, September 2007.

[23] *Solution of Delay Systems by Orthogonal Functions and Taylor Series*, **Joint Mathematics Meeting of AMS with MAA**, New Orleans, Louisiana, January 2007.

[24] *Solution of Time-Delay Systems by Hybrid Functions*, **Vezprem Optimization Conference: Advanced Algorithms**, Vezprem (The Regional Center of the Hungarian Academy of Sciences), Vezprem, Hungary, December 2006.

[25] *A numerical technique for gradient-type interface in the inverse scattering problems*, **SPIE Europe Symposium on Optics and Photonics co-located with SPIE European Remote Sensing Meeting**, Stockholm, Sweden, June 2006.

[26] *Applications of Wavelets in Environmental Modeling*, **AEH Annual meeting Conference on Soils, Sediments, and Water,** San Diego, California, January 2006.

[27] *Solution of Radiative Transfer Problems with Applications in Environmental Modeling*, **The Association for Environmental Health and Sciences**, San Diego, California, March 2005.

[28] *On the Applications of Orthogonal Functions in Pattern Recognition*, **SPIE Symposium on Modeling, Signal Processing, and Control**, San Diego, California, March 2005.

[29] *Applications of Wavelets in the Study of Input to Models in Remote Sensing*, **International Symposium on Remote Sensing of Environment**, Honolulu, Hawaii, November 2003.

[30] *On the Application of Hybrid Functions for Radiative Transfer Problems*, **American Society of Photogrammetry and Remote Sensing, ASPRS 2003 Annual Meeting**, Anchorage, Alaska, May 2003.

[31] *Solution of Control Systems with Delay by Hybrid Functions*, **Joint Mathematics Meeting of AMS with MAA**, Baltimore, Maryland, January 2003.

[32] *Solution of Nonlinear Optimal control Problems by Hybrid Functions*, **American Mathematical Society (Fall Section Meeting)**, Orlando, Florida, November 2002.

[33] *A Wavelet Method Approximation for Radiative Transfer Problems*, **American Society of Photogrammetry and Remote Sensing (ASPRS) Meeting**, Washington, District of Columbia, April 2002.

[34] *Solution of Variational Problems via Hybrid of Piecewise Constant Orthogonal Functions,* **Joint Mathematics Meeting of AMS with MAA**, San Diego, California, January 2002.

[35] *Estimating Distribution Functions using Orthogonal Polynomials,* **Characterizations, Modelling and Applications 2001**, Antalya, Turkey, December 2001.

[36] *Direct Method for Variational Problems via Hybrid Functions,* **Joint Mathematics Meeting of AMS with MAA**, Washington, District of Columbia, January 2000.

[37] *On the Optimal Control Problems Governed by Partial Differential Equations,* **American Mathematical Society, Special Session on Partial Differential Equations and Applications**, Gainesville, Florida, March 1999.

[38] *A Spectral Method for the Solution of Nonlinear Matrix Equations,* **Southeastern Atlantic Regional Conference on Differential Equations**, Auburn, Alabama, October 1998.

[39] *Solution of the Matrix Riccati Equation via the linear Liapunov Differential Equation*, **Joint Mathematics Meeting of AMS with MAA**, Baltimore, Maryland, January 1998.

[40] *A Collocation Method for the Solution of the Riccati Equation,* **Southeastern Atlantic Regional Conference on Differential Equations**, Nashville, Tennessee, October 1997.

[41] *On the Solution of the Finite Time Matrix Riccati Equation,* **Mathematics Today and Tomorrow**, Orlando, Florida, March 1997.

[42] *Solution of the Riccati Equation and its Application to Inverse Scattering Problems,* **Southeastern Atlantic Regional Conference on Differential Equations**, Atlanta, Georgia, October 1996.

[43] *A Collocation Type Method for the Solution of an Integro-differential Equation in Inverse Scattering problem,* **Southeastern Atlantic Regional Conference on Differential Equations**, Raleigh, North Carolina, October 1995.

[44] *On the Solution of Gel'Fand-Levitan Integral Equation in Inverse Scattering Problem*, **Second Mississippi State Conference on Differential Equations and Computational Simulations**, Mississippi State, Mississippi, June 1995.

[45] *A Collocation Method for a Classical Problem in Calculus of Variations*, **Joint Mathematics Meeting of AMS with MAA**, San Francisco, California, January 1995.

[46] *A Pseudospectral Method for the Solution of Linear Two-Point Boundary Value Problems*, **Southeastern Atlantic Regional Conference on Differential Equations**, Knoxville, Tennessee, October 1994.

[47] *A Collocation-Type Method for the Controlled Duffing Oscillator*, **Joint Mathematics Meeting of AMS with MAA**, Cincinnati, Ohio, January 1994.

[48] *A New Method for Solving an Engineering Problem*, **Iranian Conference on Electrical Engineering**, Tehran, Iran, March 1993.

[49] *A Direct Method for Solving Linear Quadratic Optimal Control Problems*, **UAB International Conference on Differential Equations and Mathematical Physics**, Atlanta, Georgia, January 1992.

[50] *Direct Methods in Calculus of Variations via Orthogonal Polynomials*, **Joint Mathematics Meeting of AMS with MAA**, Baltimore, Maryland, January 1992.

[51] *A Fourier Series Technique for Solving Optimal Control Problems*, **Southeastern-Atlantic Regional Conference on Differential Equations**, Mississippi State, Mississippi, June 1991.

[52] *Analysis of Linear Distributed Systems via Fourier Series Operational Matrix*, **Joint Mathematics Meeting of AMS with MAA**, San Francisco, California, January 1991.

[53] *Parameter Identification of Non-Linear Differential Equations via Fourier Series*, **Southeastern-Atlantic Regional Conference on Differential Equations**, Blacksburg, Virginia, October 1990.

[54] *Solutions of Integral Equations via Orthogonal Functions*, **UAB International Conference on Differential Equations and Mathematical Physics**, Birmingham, Alabama, June 1990.

[55] *Optimal Control of Linear Time-Varying Systems with Quadratic Cost Functions via Shifted Chebyshev Polynomials*, **American Mathematical Society Meeting**, Louisville, Kentucky, January 1990.

[56] *Solution of the Matrix Riccati Equation in Optimal Control via Fourier Series*, **66th Annual Joint Meeting of the Mathematical Association of America, Louisiana-Mississippi Section**, Biloxi, Mississippi, November 1989.

[57] *Instability in the Solution of Variational Problems Using Taylor Series Direct Method*, **Joint Mathematics Meeting of AMS with MAA**, Phoenix, Arizona, January 1989.

[58] *Solution of Linear Two-Point Boundary-Value Problems via Polynomial Series*, **Joint Mathematics Meeting of AMS with MAA**, Atlanta, Georgia, January 1988.

[59] *On the Applications of Orthogonal Functions in Optimal Control*, **64th Annual Joint Meeting of the Mathematical Association of American, Louisiana-Mississippi Section**, Columbus, Mississippi, October 1987.

[60] *Solution of the Nonsymmetric Matrix Riccati Equation in Invariant Embedding Method*, **Third Auburn Matrix Theory Conference**, Auburn, Alabama, May 1986.

[61] *On the Application and Properties of Riccati Differential Equations*, **St. Andrews Mathematics Conference**, St. Andrews, Scotland, June 1984.

Teaching Experience:

I have taught courses in Calculus, Ordinary Differential Equations, Partial Differential Equations, Engineering Mathematics, Finite Mathematics, Linear Algebra, and topics in Applied Mathematics at the undergraduate level. I have also taught Foundation of Applied Mathematics, Calculus of Variations, Special Functions, Operational Mathematics and Integral Equations at the graduate level. I have received excellent teaching evaluations from students in every institution in which I have been employed.

Ph.D. Students Supervised:

[1] Vidhya Krishnasamy, Graduated May 2016, Served as Major Professor and Thesis Advisor. Her thesis was titled "*The numerical solutions of fractional differential equations with fractional Taylor vector.*"

[2] Velinda Calvert, Graduated December 2015, Served as Major Professor and Thesis Advisor. Her thesis was titled " *Rational Bernoulli functions for solving problems on unbounded domains.*"

[3] Somayeh Mashayekhi, Graduated August 2015, Served as Major Professor and Thesis Advisor. Her thesis was titled "*Hybrid functions in fractional calculus.*"

[4] Ahmad Al–Mahmood, Graduated August 1999, Served as Major Professor.

[5] Gamal Elnagar, Graduated August 1993, served as Major Professor and Thesis Advisor. His thesis was titled "*Legendre and pseudospectral Legendre approaches for solving optimal control problems*". First student to earn Ph.D. in Mathematical Sciences at Mississippi State University. and his thesis work resulted in eight journal publications.

[6] Rani Sullivan, Ph.D. in Aerospace Engineering, Graduated 2003, Served as Minor Professor.

[7] Mohammad R. Zunoubi, Ph.D. in Electrical Engineering, Graduated 1995, Served as Minor Professor.

[8] Stephen C. Jones, Ph.D. in Electrical Engineering, Graduated 1995, Served as Minor Professor.

[9] Hongbo Fan, Ph.D. in Electrical Engineering, Graduated 1992, Served as Minor Professor.

[10] Shin–Feng Lin, Ph.D. in Electrical Engineering, Graduated 1991, Served as Minor Professor.

I have also served as Major Professor and Project Director for over 25 Master's students and the graduate program committees for many other Ph.D. and M.S. students from within and outside the department and university.

Other Contributions:

[1] **Journal Editorial Boards**

On the Editorial Board for the Journal, **Romanian Journal of Mathematics and Computer Science**.

On the Editorial Board for the Journal, **Bulletin of the "Politehnica" University of Timisoara, Transaction on Mathematics and Physics**.

[2] Refereed for **over** 160 **International Journals** in Mathematics, Mathematical Physics and Engineering.

[3] Refereed for national/international granting agencies and for the proposals under the **Dwight D. Eisenhower Professional Development Act** for Mississippi Institutions of Higher Learning.

[4] Published a refereed book chapter titled, "*Hybrid Functions Approach for Variational Problems and Optimal Control of Delay Systems,*" in the book **Control and Systems Engineering, A Report on Four Decades of Contributions**, pages 67-88, Published by Springer, 2015. This book is a tribute to 40 years of contributions by Professor Mo Jamshidi who is a well known and respected scholar, researcher, and educator.

[5] Published a refereed book chapter titled, "*On the Solution of an Integro-Differential Equation in Pattern Recognition and Remote Sensing,*" in the book **Microwave Nondestructive Evaluation and Imaging**, pages 48–62, Published by Trasworld Research, 2002 (with F. Ahmad, M. Cox, and S. Oppenheimer).

[6] Published a refereed survey article titled, "*Walsh Functions*," in the **Wiley Encyclopedia of Electrical and Electronics Engineering**, Vol. 23, 429–440, 1999 (with J. Nazarzadeh).

[7] The article titled, "*Legendre Wavelets Method for Nonlinear Volterra-Fredholm Integral Equations*," in the **Mathematics and Computers in Simulation**, Vol. 70, 1–8, 2005 (with S. Yousefi), was in the top 10 list of the most down–loaded articles for Mathematics and Computers in Simulation from October to December 2005.

[8] The article titled, "*Numerical Solution of the Controlled Duffing Oscillator by Hybrid Functions*," in the **Applied Mathematics and Computation**, Vol. 140, 179–190, 2003 (with H.R. Marzban), was in the top 10 list of the most downloaded articles for Applied Mathematics and Computation from January to May 2003.