
YUCHENG LIU

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Nationality: People's Republic of China

Immigration Status: Permanent Resident in USA, Alien of Extraordinary Ability

BIOGRAPHICAL DATA**EDUCATION**

- 2002-2005 Doctor of Philosophy degree in Mechanical Engineering granted August 2005
University of Louisville, Louisville, Kentucky
Research area: advanced product design and development/finite element methods
- 2000-2002 Master of Science degree in Mechanical Engineering granted August 2003
University of Louisville, Louisville, Kentucky
Research area: computer aided design/finite element methods
- 1993-1997 Bachelor of Science degree in Mechanical Engineering granted July 1997
Hefei University of Technology, Hefei, Anhui, China
Major: mechanical and computational design

EMPLOYMENT

- 2009-present Assistant Professor, Department of Mechanical Engineering, College of Engineering, University of Louisiana, Lafayette, Louisiana
- 2005-2008 Post-Doctoral Research Associate, Department of Mechanical Engineering, J. B. Speed Engineering School, University of Louisville, Louisville, Kentucky
- 2000-2005 Research Assistant, Department of Mechanical Engineering, J. B. Speed Engineering School, University of Louisville, Louisville, Kentucky
- 1999-2000 Manufacturing Engineer, Shanghai Yanfeng Automobile Trim Products Co., Ltd, Shanghai, China

1997-1999 Product Engineer, Shanghai Yanfeng Automobile Trim Products Co., Ltd,
Shanghai, China

AWARDS AND HONORS

2012 Summer Research Award, University of Louisiana at Lafayette
2012 Marquis Who's Who in America
2011 Research Enhancement Award, Louisiana Space Consortium
2010 Research Enhancement Award, Louisiana Space Consortium
2010 Honorary Fellow, Australian Institute of High Energetic Materials
2010 EPSCoR Neutron Travel Fellowship, University of Tennessee
2009-present Academic Keys Who's Who in Engineering Academia
2002-2004 Grosscurth Fellowship, University of Louisville
2001 Hsing Chuang Award for Excellence in Graduate Study, University of Louisville
1995-1996 Third Place Scholarship, Hefei University of Technology
1995-1996 Second Place Scholarship, Hefei University of Technology
1993-1994 Excellent Student Award, Hefei University of Technology
1993-1994 Third Place Scholarship, Hefei University of Technology
1993-1994 Third Place Scholarship, Hefei University of Technology

PROFESSIONAL DEVELOPMENT

- 2011 CAREER Award Regional Forum, Louisiana State University, Baton Rouge, LA, November 8 – 9, 2011. (Nominated by the VP Research of UL Lafayette)
- ASME District E Management Training Seminar (MTS), Dallas, TX, September 23 – 24, 2010.
- Vulcan at the SNS Workshop, Oak Ridge National Laboratory, Oak Ridge, TN, January 21 – 22, 2010.

PROFESSIONAL REGISTRATION

Professional Engineer (Mechanical Engineering), registered in Ohio State (71346) (Since 2006)

PROFESSIONAL AFFILIATIONS

Member, American Society for Engineering Education (ASEE) (Since 2011)
Member, American Society of Mechanical Engineers (ASME) (Since 2007)
Member, Society of Automotive Engineers (SAE) (Since 2007)

SERVICE

PROFESSIONAL SERVICE

NSF Review Panel for the Engineering Design Innovation Program, 2012 –
Assistant Chief Proctor, Fundamentals of Engineering (FE) Exam, Lafayette, LA, 2011 –
Speaker, Engineering & Technology Summer Camp, Lafayette, LA (2010)
Member of WASET Scientific and Technical Committee on Natural and Applied Sciences

UNIVERSITY SERVICE***University***

Member, Student Evaluation of Instruction Committee, University of Louisiana, 2009 –

Department

Member, Faculty Search Committee, Mechanical Engineering Department, 2011

Member, Curriculum Committee, Mechanical Engineering Department, 2011 –

Member, Graduate Affairs Committee, Mechanical Engineering Department, 2009 –

Member, Department of Mechanical Engineering Head Search Committee, 2009 – 2010

Advisor of the American Society of Mechanical Engineers (ASME) Student Chapter, 2009 –

EDITORSHIP***Editorial Board Member***

International Journal of Vehicle Structures & Systems 2009 –

REVIEWER***Funding Agencies***

Engineering Design Innovation Program, National Science Foundation 2011 –

National Energy Technology Laboratory, Department of Energy 2011 –

Refereed Journals

Fatigue and Fracture of Engineering Materials and Structures 2012 –

E3 Journal of Medical Research 2012 –

Engineering Computations 2012 –

Central European Journal of Engineering 2012 –

Journal of Mechanical Engineering Science 2011 –

E3 Journal of Energy Oil and Gas Research 2011 –

Journal of Engineering Design 2011 –

Zeitschrift fur Naturforschung A – Physical Sciences 2011 –

Applications and Applied Mathematics: An International Journal 2011 –

Computers & Mathematics with Applications 2011 –

International Journal for Numerical Methods for Heat and Fluid Flow 2010 –

Journal of the Franklin Institute 2010 –

International Journal of Thermal Sciences 2010 –

European Journal of Engineering Education 2010 –

Mathematic Scientific Journal 2010 –

Experimental Techniques 2009 –

SAE Transactions 2009 –

International Journal of Vehicle Structures & Systems 2009 –

International Journal of Computer Aided Engineering and Technology 2009 –

EURASIP Journal on Advances in Signal Processing 2009 –

International Journal of Computer Mathematics 2008 –

International Journal of Crashworthiness	2008 –
Journal of Computational and Applied Mathematics	2008 –
Computer Applications in Engineering and Education	2008 –
International Journal of Materials and Product Technology	2007 –
International Journal of Heavy Vehicle Systems	2007 –
International Journal of Design Engineering	2007 –
Thin-Walled Structures	2006 –

Conferences

- ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, Colorado, November 11 – 17, 2011.
- ASEE SE Section Annual Conference, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, April 18 – 20, 2010.
- 38th Annual North American Manufacturing Research Conference (NAMRC 38), Kingston, Ontario, Canada, May 26 – 28, 2010.
- 2009 ASME International Mechanical Engineering Congress & Exposition (IMECE 2009), Lake Buena Vista, Florida, USA, November 13 – 19, 2009.
- 18th IASTED International Conference on Modeling and Simulation (MS 2007), Montreal, Quebec, Canada, May 30 – June 1, 2007.

ORGANIZER AND CHAIR OF CONFERENCES/SESSIONS /WORKSHOPS

- Session Chair, 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
- Session Chair, 2012 IEEE Green Technologies Conference (GTC'12), Tulsa, OK, USA, April 19 – 20, 2012.
- Session Chair, 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, USA, June 13 – June 15, 2011.
- Co-Organizer, Steam Lab Revitalization Project Workshop, Lafayette, LA, August 20, 2010.

MEDIA COVERAGE

Interviewed by Colonel Masson, ScienceNews Radio Network, 02/07/2011, 02/16/2012.

CONSULTING ACTIVITIES

James R. Dunham	2011 –
2M-Tek Inc.	2009 –

RESEARCH

RESEARCH INTERESTS

- Computer modeling and simulation
- Computer-aided design and engineering
- Finite element analysis

- Computational fluid dynamics
- Crashworthiness analysis
- Structural mechanics
- Kinematics and dynamics
- Optimum design
- Mechanical and advanced machine design
- Manufacturing
- Vehicle system design and analysis
- Development of interactive design software
- Applied mathematics

PUBLICATIONS (TOTAL: 2 books, 3 chapters, 56 journal articles, and 35 conference proceedings)

Books and Chapters

1. **Liu, Yucheng**, Alidoust, S. and Qi, B., “Prototyping and Experimental Evaluation of An Air Filtration System”, Accepted for publication in *Refrigeration Systems, Design Technologies and Developments*, Nova Science Publishers, Inc., Hauppauge, NY, USA.
2. Peymani, F. Y., Ghanbary, S. A., **Liu, Yucheng** and Hayatdavoudi, A. Z., “CFD Simulation of Phase Particle Entrapment”, Chapter 7 in *Engineering Applications of Computational Fluid Dynamics*, Edited by Maher A. R. Sadiq Al-Baghdadi, International Energy and Environment Foundation, 2011 pp. 285 – 318.
3. **Liu, Yucheng**, [*Development of Simplified Crash Computer Models for Thin-Walled Beams*](#), LAP Lambert Academic Publishing, Koln, Germany, 2009.
4. **Liu, Yucheng**, [*Simplified Modeling for Crashworthiness Analysis: Vehicle Chassis*](#), VDM-Verlag, Saarbrucken, Germany, 2008.
5. **Liu, Yucheng** and Day, M. L., “[*Axial Crushing of Thin-Walled Tubes with Octagonal Section: Modeling and Design*](#)”, Chapter 25 in *Advances in Computational Algorithms and Data Analysis*, Edited by S.-L. Ao, B. B. Rieger, and S.-S. Chen, Springer Netherlands, 2008.

Refereed Journals

Published or Accepted

1. **Liu, Yucheng** and Wang, Q.-K., “Strengthening Effects of Stiffeners on Regular and Arbitrary Stiffened Plates”, Accepted by *Thin-Walled Structures*, ***In Press***.
2. **Liu, Yucheng** and Glass, G. A., “Choose the Best Element Size to Yield Accurate FEA Results while Reduce FE Model’s Complexity”, Accepted by *Journal of Mechanics Engineering and Automation*, ***In Press***.
3. Liu, W.-L. and **Liu, Yucheng**, “Trend Prediction of Seismicity in Lower Reaches of Yangtze River – Yellow Sea (Y-Y) Seismic Belt in 2011-2020”, Accepted by *Geosciences*, ***In Press***.
4. Kozman, T. A., **Liu, Yucheng**, Simon, W. E. and Guidry, J. J., “A Revitalized Steam Lab and Its Impacts on Both Industry and Engineering Education”, Accepted by *International Journal of Energy Engineering*, ***In Press***.

5. **Liu, Yucheng**, “Application of Legendre Polynomials in Solving Volterra Integral Equations of The Second Kind”, Accepted by *Applied Mathematics*, **In Press**.
6. **Liu, Yucheng** and Chu, S. J., “Advance Application of Wind Technology in Louisiana”, Accepted by *International Journal of Applied Environmental and Biological Sciences*, **In Press**.
7. Liu, W.-L. and **Liu, Yucheng**, “[Identify Criteria of Seismic Wave of Earthquake Gap, Earthquake Belt, and Foreshock](#)“, *ISSET Journal of Earthquake Technology*, 2011 48(1).
8. Liu, W.-L. and **Liu, Yucheng**, “[Variation of Focal Parameters and Medium Characteristics during Small Earthquakes](#)”, *Geosciences*, 2012 2(2) pp. 14 – 24.
9. Liu, W.-L. and **Liu, Yucheng**, “[Applicability of Several Seismic Wave Parameters in Earthquake Prediction](#)”, *International Research Journal of Geology and Mining*, 2012 2(2) pp. 32 – 40.
10. Bi, X.-G. and **Liu, Yucheng**, “[Modeling, Simulation, and Analysis of A Multi-Degree-of-Freedom Aircraft Wing Model](#)”, *Mathematic Scientific Journal*, 2011 7(1) pp. 21 – 62.
11. **Liu, Yucheng** and Kurra, S. N., “[Solution of Blasius Equation by Variational Iteration](#)”, *Applied Mathematics*, 2011 1(1) pp. 24 – 27.
12. **Liu, Yucheng**, Chu, S. J. and Viera, R. J., “[Analysis of Structural Impact and Crashworthiness using Experimental, Analytical and Computational Techniques: An Overview and Recent Developments](#)”, *International Journal of Vehicle Structures & Systems*, 2011 3(3) pp. 144 – 153.
13. **Liu, Yucheng**, “[A Programming Course Including C# and MATLAB for Mechanical Engineering Students](#)”, *ASEE Computers in Education Journal*, 2011 2(3) pp. 106 – 112.
14. **Liu, Yucheng** and Gurram, C. S., “[Solving Nonlinear Differential Difference Equations Using He’s Variational Iteration Method](#)“, *Applied Mathematical and Computational Sciences*, 2011 3(1) pp. 33 – 46.
15. **Liu, Yucheng**, Artigue, A. J., Sommers, J. D. and Chambers, T. L., “[Theo Jansen Project in Engineering Design Course and A Design Example](#)“, *European Journal of Engineering Education*, 2011 36(2) pp. 187 – 198.
16. **Liu, Yucheng**, “[Teaching Continuum Mechanics in Mechanical Engineering Program](#)“, *Journal of STEM Education: Innovations and Research*, 2011 12(1/2) pp. 17 – 23.
17. **Liu, Yucheng**, “[A Refined Shear Deformation Plate Theory](#)“, *International Journal for Computational Methods in Engineering Science and Mechanics*, 2011 12(3) pp. 141 – 149.
18. **Liu, Yucheng**, “[Development of Instructional Courseware in Thermodynamics Education](#)“, *Computer Applications in Engineering Education*, 2011 19(1) pp. 115 – 124.
19. **Liu, Yucheng** and Glass, G. A., “[Effects of Wall Thickness and Geometric Shape on Thin-Walled Parts Structural Performance](#)“, *Thin-Walled Structures*, 2011 49 pp. 223 – 231.
20. **Liu, Yucheng**, “[Solving Abel Integral Equation by Using Chebyshev Wavelets](#)“, *Mathematic Scientific Journal*, 2010 6(1:12), pp. 51 – 17.

21. **Liu, Yucheng**, "[Modeling Abstractions of Vehicle Suspension Systems Supporting The Rigid Body Analysis](#)", *International Journal of Vehicle Structures & Systems*, 2010 2(3-4) pp. 117 – 126.
22. **Liu, Yucheng**, "[Development of Simplified Truck Chassis Model for Crash Analysis in Different Impact Scenarios](#)", *International Journal of Crashworthiness*, 2010 15(5) pp. 457 – 467.
23. **Liu, Yucheng**, "[Crashworthiness Design of Thin-Walled Curved Beams with Box and Channel Cross Sections](#)", *International Journal of Crashworthiness*, 2010 15(4) pp. 413 – 423.
24. **Liu, Yucheng**, "[Thin-Walled Curved Hexagonal Beams in Crashes – FEA and Design](#)", *International Journal of Crashworthiness*, 2010 15(2) pp. 151 – 159.
25. **Liu, Yucheng**, "[A Beam Element Using Touratier Theory](#)", *International Journal for Computational Methods in Engineering Science and Mechanics*, 2010 11(3) pp. 142 – 145.
26. **Liu, Yucheng**, "[Development and Evaluation of a Finite Element Truck Chassis Crash Model](#)", *International Journal of Crashworthiness*, 2010 15(1) pp. 107 – 113.
27. Bi, X.-G. and **Liu, Yucheng**, "[Experimental Techniques of Measuring Vibratory Force for Aircraft Wings](#)", *SAE International Journal of Aerospace*, 2010 2(1) pp. 291 – 296.
28. **Liu, Yucheng**, "[Optimization of the Crushing Performance of Tubular Structures](#)", *HKIE (The Hong Kong Institution of Engineers) Transactions*, 2010 17(1) pp. 16 – 25.
29. Liu, W.-L. and **Liu, Yucheng**, "[Application of Seismic Wave Method in Early Estimation of Wencheng Earthquake](#)", *International Journal of Engineering and Applied Sciences*, 2010 6(3) pp. 195 – 202.
30. **Liu, Yucheng** and Gurram, C. S., "[The Use of He's Variational Iteration Method for Solving Free Vibration of Euler-Bernoulli Beam](#)", *Mathematical and Computer Modelling*, 2009 50(11/12) pp. 1545 – 1552.
31. **Liu, Yucheng**, "[Validation of Simplified Truck Chassis Model in Different Impact Scenarios](#)", *SAE Transactions*, paper no. 2009-01-1674, June 2009.
32. **Liu, Yucheng**, "[Dynamic Crushing Behaviors of Steel Beams with Box Section](#)", *International Journal of Vehicle Structures & Systems*, 2009 1(1-3) pp. 45 – 49.
33. **Liu, Yucheng**, "[Application of Chebyshev Polynomial in Solving Fredholm Integral Equations](#)", *Mathematical and Computer Modelling*, 2009 50(3/4) pp. 465 – 469.
34. **Liu, Yucheng**, "[Adomian Decomposition Method with Second Kind Chebyshev Polynomials](#)", *Proceedings of the Jangjeon Mathematical Society*, 2009 12(1) pp. 57 – 67.
35. **Liu, Yucheng**, "[Simulating Torsional Collapse Behavior of Thin-Walled Beams Using Simplified Finite Element Models](#)", *International Journal for Computational Methods in Engineering Science and Mechanics*, 2009 10(4) pp. 259 – 265.
36. **Liu, Yucheng**, "[Collapse Behavior and Simplified Modeling of Triangular Cross-Section Columns](#)", *Indian Journal of Engineering & Material Sciences*, 2009 16(2) pp. 71 – 78.
37. **Liu, Yucheng**, "[Adomian Decomposition Method with Orthogonal Polynomials: Legendre Polynomials](#)", *Mathematical and Computer Modelling*, 2009 49(5/6) pp. 1268 – 1273.

38. **Liu, Yucheng** and Day, M. L., "[Concept Modeling of Tapered Thin-Walled Tubes](#)", *Journal of Zhejiang University Science A*, 2009 10(1) pp. 44 – 53.
39. **Liu, Yucheng**, "[Crashworthiness Design of Multicorner Thin-Walled Columns](#)", *Thin-Walled Structures*, 2008 46(12) pp. 1329 – 1337.
40. **Liu, Yucheng**, "[Improved Concept Models for Straight Thin-Walled Columns with Box Cross Section](#)", *Journal of Zhejiang University Science A*, 2008 9(11) pp. 1473 – 1479.
41. **Liu, Yucheng** and Day, M. L., "[Multi-Axis Bending of Channel Section Beam and Modeling](#)", *Thin-Walled Structures*, 2008 46(11) pp. 1290 – 1303.
42. **Liu, Yucheng**, "[Design Optimization of Tapered Thin-Walled Square Tubes](#)", *International Journal of Crashworthiness*, 2008 13(5) pp. 543 – 550.
43. **Liu, Yucheng** and Day, M. L., "[Simplified Truck Chassis Modeling and Crashworthiness Analysis](#)", *International Journal of Heavy Vehicle Systems*, 2008 15(2/3/4) pp. 237 – 254.
44. **Liu, Yucheng**, "[Constructing Equations of Motion for A Vehicle Rigid Body Model](#)", *SAE International Journal of Passenger Cars – Mechanical Systems*, 2008 1(1) pp. 1289-1297.
45. **Liu, Yucheng**, "[Recent Innovations in Vehicle Suspension Systems](#)", *Recent Patents on Mechanical Engineering*, 2008 1(3) pp. 206 – 210.
46. **Liu, Yucheng**, "[ANSYS and LS-DYNA Used for Structural Analysis](#)", *International Journal of Computer Aided Engineering and Technology*, 2008 1(1) pp. 31 – 44.
47. **Liu, Yucheng**, "[Design Optimization of Thin-Walled Steel Beams with Improved Stiffness and Reduced Weight](#)", *International Journal of Design Engineering*, 2008 1(2) pp. 149 – 165.
48. **Liu, Yucheng**, "[Structural and NVH Analyses of Mixed Thin-Walled Structures Using FEA Concept Models](#)", *International Journal of Computer Applications in Technology*, 2008 32(1) pp. 63 – 68.
49. **Liu, Yucheng** and Day, M. L., "[Bending Collapse of Thin-Walled Circular Tubes and Computational Application](#)", *Thin-Walled Structures*, 2008 46(4) pp. 442 – 450.
50. **Liu, Yucheng**, "[Optimum Design of Thin-Walled Box Section Beams for Crashworthiness Analysis](#)", *Finite Elements in Analysis and Design*, 2008 44(3) pp. 139 – 147.
51. **Liu, Yucheng** and Day, M. L., "[Impact Experimental Analysis and Computer Simulation on Automotive Bumper System](#)", *International Journal for Computational Methods in Engineering Science and Mechanics*, 2008 9(1) pp. 51 – 59.
52. **Liu, Yucheng** and Day, M. L., "[Simplified Modeling of Cross Members in Vehicle Design](#)", *SAE Transactions: Journal of Passenger Cars – Mechanical Systems*, paper no. 2007-01-2135, 2007.
53. **Liu, Yucheng** and Day, M. L., "[Development of Simplified Finite Element Model for General Thin-Walled Structures](#)", *International Journal of Crashworthiness*, 2007 12(6) pp. 597 – 608.
54. **Liu, Yucheng** and Day, M. L., "[Development of Simplified Finite Element Model for Straight Thin-Walled Tubes with Octagonal Cross Section](#)", *International Journal of Crashworthiness*, 2007 12(5) pp. 503 – 508.

55. **Liu, Yucheng** and Day, M. L., “[Simplified Modeling of Thin-Walled Box Section Beam](#)“, *International Journal of Crashworthiness*, 2006 11(3) pp. 263 – 272.
56. **Liu, Yucheng** and Day, M. L., “[Bending Collapse of Thin-Walled Beams with Channel Cross Section](#)“, *International Journal of Crashworthiness*, 2006 11(3) pp. 251 – 262.

Under Review

57. Liu, W.-L. and **Liu, Yucheng**, “General Approaches of Solving Seismic Source Dynamic Parameters and Q Value of the Medium”, Submitted to *GeoScience Engineering*, Under Review.
58. Liu, W.-L. and **Liu, Yucheng**, “Commonly Used Earthquake Source Models”, Submitted to *Contributions to Geophysics and Geodesy*, Under Review.
59. Liu, W.-L. and **Liu, Yucheng**, “Group Features of Small Seismic Waveforms”, Submitted to *Zeitschrift fur Naturforschung A – Physical Sciences*, Under Review.
60. Peymani, Y. F., **Liu, Yucheng** and Hayatdavoudi, A., “CFD Simulation and Validation of Phase Particle Entrapment”, Submitted to *Separation & Purification Reviews*, Under Review.
61. **Liu, Yucheng** and Peymani, F. Y., “An Analytical Model to Evaluate Performance of Paddle Wheel in Generating Electricity from Moving Fluid and Computer Simulations”, Submitted to *International Journal of Computational Fluid Dynamics*, Under Review.
62. **Liu, Yucheng** and Wang, Q.-K., “Strengthening Effects of Arbitrarily Stiffened Plates and Regularly Stiffened Plates Subject to Biaxial Stress”, Submitted to *Thin-Walled Structures*, Under Review.

Dissertation

Liu, Yucheng, “Development of Simplified Models for Crashworthiness Analysis”, University of Louisville, USA, 2005.

Conference Proceedings

1. **Liu, Yucheng**, “Numerical Methods for Solving Abel Integral Equation and Fredholm Integration Equation”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
2. **Liu, Yucheng**, “A Modified Adomian Decomposition Method”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
3. **Liu, Yucheng**, “A New Developed Shear Deformation Plate”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
4. **Liu, Yucheng**, “A New Beam Element for Structural Analysis”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
5. **Liu, Yucheng** and Gurram, C. S., “A Numerical Method for Solving Free Vibration of Euler-Bernoulli Beam”, Proceedings of 2012 International Conference on Computer,

- Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
6. **Liu, Yucheng**, “Application of Legendre Polynomials in Adomian Decomposition Method”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
 7. **Liu, Yucheng** and Glass, G. A., “Structural Performance of Thin-Walled Panels”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
 8. **Liu, Yucheng** and Kurra, S. N., “Solving Blasius Equation using HVIM”, Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
 9. Pastor, J. and **Liu, Yucheng**, “Hydrokinetic Energy Overview and Energy Potential for the Gulf of Mexico”, Proceedings of 2012 IEEE Green Technologies Conference (GTC’12), Tulsa, OK, USA, April 19 – 20, 2012.
 10. Peymani, Y. F. and **Liu, Yucheng**, “Development of an Analytical Model to Predict the Performance of Paddle Wheel in Generating Electricity and Its Validation Using Computational Fluid Dynamics (CFD)”, Proceedings of 2012 IEEE Green Technologies Conference (GTC’12), Tulsa, OK, USA, April 19 – 20, 2012.
 11. Peymani, Y. F., Ghanbari, S. A., **Liu, Yucheng** and Hayatdavoudi, A., “Design and Validate a Particulate Matter Management System Computationally”, paper no. IMECE2011-64063, Proceedings of ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, USA, November 11 – 17, 2011.
 12. **Liu, Yucheng**, “A Numerical Method of Solving Volterra Integral Equation”, Proceedings of 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, USA, June 13 – June 15, 2011.
 13. **Liu, Yucheng**, “A Numerical Method of Solving Nonlinear Differential Difference Equations”, Proceedings of 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, USA, June 13 – June 15, 2011.
 14. Kozman, T. A., Simon, W. E., **Liu, Yucheng** and Guidry, J. J., “Revitalization of A Steam Lab to Meet Energy Challenge and Strengthen Mechanical Engineering Education”, Proceedings of Industrial Energy Technology Conference (IETC 2011), New Orleans, LA, USA, May 17 – 19, 2011.
 15. Chu, S. J. and **Liu, Yucheng**, “Prospects of Wind Energy and Wind Power in Louisiana”, Proceedings of 2011 IEEE Green Technologies Conference (GTC’11), Baton Rouge, LA, USA, April 14 – 15, 2011.
 16. **Liu, Yucheng**, “Design of Lightweight Thin-Walled Beams with Enhanced Stiffness”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
 17. **Liu, Yucheng**, “Modeling, Analysis, and Design of Multi-Corner Thin-Walled Columns”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.

18. **Liu, Yucheng**, “Modeling and Simulation of Thin-Walled Columns with Triangular Cross-Section”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
19. **Liu, Yucheng**, “Study of Crash Energy Absorption Capability of Thin-Walled Curved Beams with Box and Channel Cross Sections Using FEA”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
20. **Liu, Yucheng**, “Modeling, Analysis, and Design of Thin-Walled Curved Hexagonal Beams in Crash”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
21. **Liu, Yucheng**, “Crashworthiness Response and Design of Tapered Thin-Walled Square Beams”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
22. **Liu, Yucheng**, “Design and Modeling of Thin-Walled Tubular Structures During Crashworthiness Analysis”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
23. **Liu, Yucheng**, “Crashworthiness Design of Thin-Walled Box Section Beams Using FEA and RSM”, Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
24. **Liu, Yucheng**, “Crashworthiness Analysis of Finite Element Truck Chassis Model Using LS-DYNA”, Proceedings of 11th International LS-DYNA Users Conference, Dearborn, MI, USA, June 6 – 8, 2010.
25. **Liu, Yucheng**, “Study of Thin-Walled Box Beams Crushing Behaviors Using LS-DYNA”, Proceedings of 11th International LS-DYNA Users Conference, Dearborn, MI, USA, June 6 – 8, 2010.
26. Artigue, A. J., Sommers, J. D., **Liu, Yucheng** and Chambers, T. L., “Achieve Objectives of Engineering Design Course Through Theo Jansen Project and A Design Sample”, Proceedings of ASEE Southeastern Annual Conference, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA, April 18 – 20, 2010.
27. Bi, X.-G. and **Liu, Yucheng**, “Analytical Methods of Evaluating Aerodynamic Forces of Aircraft Wings”, SAE paper no. 2009-01-3281, SAE 2009 AeroTech Congress & Exhibition, Seattle, WA, USA, November 10 – 12, 2009.
28. Bi, X.-G. and **Liu, Yucheng**, “Experimental Techniques of Measuring Vibratory Force for Aircraft Wings”, SAE paper no. 2009-01-3283, SAE 2009 AeroTech Congress & Exhibition, Seattle, WA, USA, November 10 – 12, 2009.
29. **Liu, Yucheng** and Day, M. L., “Parametric Study on Axial Crushing of Thin-Walled Beams with Box Section”, Proceedings of Symposium on Mechanics of Slender Structures (MoSS 2008), University of Maryland Baltimore County, Baltimore County, MD, USA, July 23 – 25, 2008.

30. **Liu, Yucheng** and Day, M. L., “Bending and Modeling of Channel Section Beam”, Proceedings of Symposium on Mechanics of Slender Structures (MoSS 2008), University of Maryland Baltimore County, Baltimore County, MD, USA, July 23 – 25, 2008.
31. **Liu, Yucheng** and Day, M. L., “Simplified Modeling of Thin-Walled Tubes with Octagonal Cross Section – Axial Crushing”, Proceedings of World Congress on Engineering and Computer Science (WCECS 2007), San Francisco, CA, USA, October 24 – 26, 2007.
32. **Liu, Yucheng** and Day, M. L., “Simplified Modeling of Thin-Walled Tubes with Octagonal Cross Section – Axial Crushing”, Proceedings of 6th European LS-DYNA Users’ Conference, Gothenburg, Sweden, May 29 – 30, 2007.
33. **Liu, Yucheng** and Day, M. L., “Development of Simplified Truck Chassis Model for Crashworthiness Analysis”, Proceedings of LS-DYNA International Users Conference, Dearborn, MI, USA, June 4 – 6, 2006.
34. **Liu, Yucheng** and Day, M. L., “Impact Experimental Analysis and Computer Simulation Using ANSYS”, Proceedings of 2006 International ANSYS Conference, Pittsburgh, PA, USA, May 2 – 4, 2006.
35. **Liu, Yucheng** and Day, M. L., “Comparisons between Detailed and Simplified Models for Thin-Walled Beams Structures”, Proceedings of 2005 Huntsville Simulation Conference, Huntsville, AL, USA, October 25 – 28, 2005.

SEMINARS AND CONFERENCE PRESENTATIONS

1. “Recent Research Achievements in Engineering Numerical Method and Analysis”, Presentation in 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 14, 2012.
2. “Development of An Analytical Model to Predict The Performance of Paddle Wheel in Generating Electricity and Its Validation Using Computational Fluid Dynamics (CFD)”, Presentation in 2012 IEEE Green Technologies Conference (GTC’12), Tulsa, OK, April 19, 2012.
3. “Demonstration of A Cost Effective, Portable and Efficient Particulate Management System”, Presentation at NASA Stennis Space Center, MS, April 9, 2012.
4. “CFD Simulation of Phase Particle Entrapment”, Presentation in ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, November 17, 2011.
5. “Thin-Walled Parts Structural Performance during Static, Modal, and Dynamic Analysis”, Presentation in ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, November 15, 2011.
6. “Computer Modeling and Simulation in Engineering Design and Analysis”, The Center for Advanced Computer Studies Colloquium, University of Louisiana at Lafayette, Lafayette, LA, November 11, 2011.
7. “Application of He’s Variational Iteration Method to Solve Nonlinear Differential Difference Equations”, Presentation in 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, June 15, 2011.

8. “Solving Volterra Integral Equation of The Second Kind by Applying Legendre Polynomials”, Presentation in 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, June 13, 2011.
9. “A Revitalized Steam Lab in UL Lafayette”, Presentation in 2011 Industrial Energy Technology Conference (IETC 2011), New Orleans, LA, May 18, 2011.
10. “Application of Computational Techniques in Structural Impact and Crashworthiness Analysis”, **Invited Talk**, Louisiana State University, Baton Rouge, LA, February 18, 2011.
11. “Crushing Behavior of Thin-Walled Beams”, Presentation in MCHE Seminar, University of Louisiana at Lafayette, Lafayette, LA, December 2, 2008.
12. “A Review of My Recent Research, Teaching, and Projects”, Presentation in MEIE Seminar, Texas A&M University – Kingsville, Kingsville, TX, November 3, 2008.
13. “Bending and Modeling of Channel Section Beam”, Presentation in 2008 Symposium on Mechanics of Slender Structures, University of Maryland Baltimore County, Baltimore County, MD, July 24, 2008.
14. “Parametric Study on Axial Crushing of Thin-Walled Beams with Box Section”, Presentation in 2008 Symposium on Mechanics of Slender Structures, University of Maryland Baltimore County, Baltimore County, MD, July 24, 2008.
15. “Crushing Behaviors of Thin-Walled Members, Modeling and Design”, Presentation in ME Seminar, Mississippi State University, Starkville, MS, January 25, 2008.
16. “Impact Experimental Analysis and Computer Simulation Using ANSYS”, Presentation in 2006 International ANSYS Conference, Pittsburgh, PA, May 2 – 4, 2006.
17. “Development of Simplified Models for Crashworthiness Analysis”, Presentation in ME Seminar, University of Louisville, January 24, 2006.
18. “Comparisons between Detailed and Simplified Models for Thin-Walled Beams Structures”, Presentation in 2005 Huntsville Simulation Conference, Huntsville, AL, October 25 – 28, 2005.

POSTERS AND ABSTRACTS

1. Honegger, J. and **Liu, Yucheng**, “Expedient Wind Energy Potential in Louisiana”, Proceedings of 2012 IEEE Green Technologies Conference (GTC’12), Tulsa, OK, USA, April 19 – 20, 2012.
2. Wang, Q.-K. and **Liu, Yucheng**, “Assessing Ultimate Limit Strength of Stiffened Plates through ANSYS Nonlinear Simulation”, 2012 ANSYS Simulation Symposium, Dallas, TX, February 7, 2012.
3. Wang, Q.-K. and **Liu, Yucheng**, “A Semi-Analytical Algorithm of Using ANSYS for Pre- and Post-buckling Analysis of Stiffened Plates”, 2012 ANSYS Simulation Symposium, Dallas, TX, February 7, 2012.
4. **Liu, Yucheng**, “Research and Education Goals on Computer Modeling and Simulation”, 2011 CAREER Award Regional Forum, Louisiana State University, Baton Rouge, LA, November 8 – 9, 2011.

5. Peymani, Y. F., **Liu, Yucheng**, Hayatdavoudi, A. and Ghanbari, S. A., “CFD Simulation of Phase Particulate Entrapment”, 2011 ANSYS Regional Conference, Houston, TX, August 31 – September 1, 2011.
6. Wang, Q.-K. and **Liu, Yucheng**, “Using of ANSYS for the Modeling and Simulation of Stiffened Plates”, 2011 ANSYS Regional Conference, Houston, TX, August 31 – September 1, 2011.

PROJECTS

Externally Funded Projects

1. “Modeling and Simulation of Cyclic Impact of Iceberg on Platforms in the Arctic”, National Science Foundation and Louisiana Board of Regents, 09/01/2012 – 06/30/2013, \$4,500, PI.
2. “Investigation of Lateral Impact Behavior of Pressurized Pipelines and Influence of Internal Pressure”, Louisiana Board of Regents, 06/01/2012 – 06/30/2015, \$280,047 (External Grant \$152,290 + Institutional Match \$127,757), Contract No. LEQSF(2012-15)-RD-A-28, PI.
3. “Development of Cross-Sectional Warping Functions for Modeling Thin-Walled Beam’s Buckling during Dynamic Analysis”, National Science Foundation and Louisiana Board of Regents, 03/01/2012 – 02/28/2013, \$10,000, Contract No. LEQSF-EPS(2012)-PFUND-297, PI.
4. “UL Ocean Energy and Technology Research Development – Phase I”, Chevron Corporation, 02/15/2012 – 07/10/2012, \$23,235, Co-PI.
5. “Summer Learning Camp for Advancement of STEM Education Utilizing Robotics for 10th and 11th Grade Students Using PBL-Project-Based Learning”, Louisiana Board of Regents, 04/01/2011 – 07/18/2012, \$66,396 (External Grant \$46,021 + Institutional Match \$20,375), Co-PI.
6. “Enhance Modeling and Simulation of Aerospace Systems by Developing an Efficient Algorithm for Solving Differential Equations”, Louisiana Space Consortium (LaSPACE), 01/01/2012 – 12/31/2012, \$60,831 (External Grant \$35,817 + Institutional Match \$26,287), Contract No. 63095, PI.
7. “Student Participation in 4th IEEE Region Annual Green Technologies Conference”, Advanced Research Projects Agency – Energy (ARPA-E), 04/19/2012 – 04/22/2012, \$6,890, PI.
8. “Louisiana State Save Energy Now – Phase II”, US Department of Energy (DoE), 10/01/2011 – 09/30/2012, \$178,747, Co-PI.
9. “Development of a Cost Effective, Portable Particulate Control System to Safely Process Accumulated Particular Matter”, NASA EPSCoR program and Louisiana Board of Regents, 07/01/2011 – 06/30/2012, \$61,025 (External Grant \$30,000 + Institutional Match \$31,025), Contract No. NASA(2011)-DART-49, PI.
10. “Travel Application to Visit Dr. Agui at NASA Research Center”, Louisiana Space Consortium (LaSPACE), 07/25/2011 – 07/27/2011, \$1,270, PI.
11. “Development of Prototype for Particulate Matter Management System to Promote Safe Removal and Disposal of Accumulated Particles”, National Science Foundation and

- Louisiana Board of Regents, 09/01/2011 – 08/31/2012, \$19,982, Contract No. LEQSF-EPS(2011)-OPT-IN-08, PI.
12. “A Technical Review of the Application Potential of a Hydropower Electricity Barge”, United International Corporation, 04/15/2011 – 08/15/2011, \$10,000, PI.
 13. “Training in Modeling and Simulation of Nano-Indentation at OSU Lab”, National Science Foundation and Louisiana Board of Regents, 02/13/2011 – 02/27/2011, \$3,396 (External Grant \$2,000 + Institutional Match \$1,396), Contract No. NSF (2011)-LINK-52, PI.
 14. “Pilot Solar Thermal Power Plant Installation”, Empower Louisiana Renewable Energy Grant Program, Louisiana Department of Natural Resources (DNR) and CLECO, 07/01/2010 – 04/30/2012, \$1,210,000 (DNR \$565,000 + CLECO \$645,000), Co-PI.
 15. “Development of a Computationally Efficient Analytical Method for Design and Analysis of Stiffened Plates”, Louisiana Space Consortium (LaSPACE), 10/15/2010 – 10/14/2011, \$59,680 (External Grant \$29,984 + Institutional Match \$29,696), Contract No. 51735, PI.
 16. “Computer Design and Simulation of Liquid and Foam Trap for Particulate Matter Management”, Louisiana Space Consortium (LaSPACE), 09/01/2010 – 05/31/2011, \$41,024 (External Grant \$20,235 + Institutional Match \$20,789), Contract No. 50137, PI.
 17. “Louisiana State Save Energy Now”, US Department of Energy (DoE), 10/01/2009 – 02/28/2011, \$300,869, Co-PI.
 18. “LaSPACE Minority Research Scholarship”, Louisiana Space Consortium (LaSPACE), 06/01/2010 – 02/28/2011, \$5,000, Contract No. 46982, PI.

Internally Funded Projects

1. “Modeling and Simulation of Mild Steel’s Moderate Velocity Impact Behavior at Multi-Length Scales”, ULL Summer Research Project, 05/15/2012 – 08/15/2012, \$6,600, PI.

Other Projects

- | | |
|-----------|--|
| 2007-2008 | Post-Doctor, “Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles: Phase 3 – CMTS Reliability and Safety Module”, Department of Defense/U.S. Army Tank-Automotive and Armaments Command. |
| 2007-2008 | Post-Doctor, “Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles: Phase 2 – CMTS Functionality Enhancements: Closures, Armor, and Nonstructural Components”, Department of Defense/U.S. Army Tank-Automotive and Armaments Command. |
| 2005-2007 | Post-Doctor, “Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles”, Department of Defense/U.S. Army Tank-Automotive and Armaments Command. |
| 2004-2005 | Research Assistant, “Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles”, Department of Defense/U.S. Army Tank-Automotive and Armaments Command. |

- 2000-2002 Research Assistant, “Improved Design Architectures for Light Platforms – Phase III”, Ford Motor Company, US Army.
- 1998-2000 Product Engineer, “Shanghai General Motor (SGM) Automotive Instrumental Panel Design Project”, Shanghai General Motor Company.

TEACHING

TEACHING INTERESTS

- Computer aided design and engineering
- Finite element analysis
- Kinematics and Dynamics
- Mechanics of materials
- Continuum mechanics
- Mechanical and advanced machine design
- Optimum design
- Engineering mathematics
- Thermodynamics

COURSES (TOTAL: 9 courses taught in 2 universities)

<i>Start From</i>	<i>Course Name</i>	<i>Times</i>
University of Louisiana		
Summer 2012	ENGR 597 – Independent Study (3hrs)	1
Fall 2011	ENGR 513 – Engineering Mathematics (3hrs)	1
Spring 2011	ENGR 597 – Special Topics (3hrs)	1
Spring 2011	MCHE 470 – Special Topics (3hrs)	1
Spring 2011	MCHE 578 – Special Topics (3hrs)	1
Fall 2010	MCHE 478 – Finite Element Analysis (3hrs)	4
Fall 2010	MCHE 599 – Thesis Research (6hrs)	4
Spring 2009	MCHE 301 – Engineering Analysis (3hrs)	5
Spring 2009	MCHE 363 – Engineering Design (3hrs)	4
University of Louisville		
Fall 2007	ME 252 – Thermodynamics I (3hrs)	1
Fall 2007	ME 280 – Structured Programming (3hrs)	1
Summer 2007	ME 310 – Thermodynamics II (3hrs)	1
Fall 2006	ME 606 – Continuum Mechanics (3hrs)	1

GRADUATE STUDENT SUPERVISED

1. Gary A. Glass, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Investigation of Thin-Walled Structural Performance through Finite Element Analysis and Choose the Best Element Size for Analysis Results”, November, 2011.

GRADUATE COMMITTEE MEMBERSHIP

1. Edward Evans, M.Sc. of Petroleum Engineering, University of Louisiana at Lafayette, “Prevention and Mitigation of Asphaltene Deposition in an Intermittent CO₂ Flood”, May, 2012.
2. Zhao Pan, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Fast Modeling and Performance Analysis of A Concentrated Solar Thermal Power Plant”, May, 2012.
3. Kelly L. Guiberteau, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Capturing Wave Energy in the Gulf of Mexico”, May, 2012.
4. Yoosef Peymani F., M.Sc. of Petroleum Engineering, University of Louisiana at Lafayette, “Three Phase Simulation and Optimization of Dissolved Air Floatation Folded Flow (DAFFF) System Computationally”, November, 2011.
5. Kirkrai Yuvamitra, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Energy Management Planning for Manufacturing Industry”, July, 2011.
6. Chunzai Liu, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Mechanical and Thermal Behavior of Vapor Grown Carbon Nanofiber/Low Density Polyethylene Composites”, May, 2011.
7. Pengfei Zhang, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Process Development and Characterization of Fiber/Polymer Composites Reinforced with Carbon Nanofibers Using A Spraying Technique and Fabricated by VARTM”, May, 2011.
8. Richard J. Jones, Jr, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Validating Annealed SS304 Properties through Various Material Testing Techniques at the Meso and Micro Scales”, May, 2011.
9. Sumant S. Kulkarni, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Optimal Design of Fixture Layout in Multi-station Assembly Processes: A Highly Optimized Tolerance Inspired Procedure”, May, 2011.
10. Amir Pishahang, M.Sc. of Petroleum Engineering, University of Louisiana at Lafayette, “Two New Correlations for CO₂ and Flue Gas Injection under Miscible Condition”, Summer, 2010.
11. Venkata M. K. Boyapati, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, “Simulation Aided Future State Mapping of Make-To-Order Production Shop”, December, 2009.

STUDENT PAPERS AND POSTERS SUPERVISED

1. Peymani, F. Y. and Ghanbari, S. A., “CFD Simulation of Phase Particulate Entrapment”, 2011 Engineering and Technology Week – Graduate Student Poster Competition, March 2011, Lafayette, LA, **Third Place**.
2. Chu, S. J., “Wind Energy in Louisiana”, 2010 Engineering and Technology Week – E.R. DesOrmeaux Undergraduate Student Technical Paper Contest, March, 2010, Lafayette, LA, **Third Place**.