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## Education

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|---|---|
| 1991-1994 | Harvard University, Cambridge, MA<br>Ph.D. Division of Engineering and Applied Sciences<br>Major: Decision and Control |
| 1987-1989 | National Taiwan University, Taiwan<br>M.S. Department of Electrical Engineering |
| 1983-1987 | National Chiao-Tung University, Taiwan<br>B.S. Department of Control Engineering |

## Academic Experience

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| 2011 - | Professor of Electrical Engineering, National Taiwan University, Taipei, Taiwan |
| 2007 - 2011 | Professor of Systems Engineering & Operations Research, School of Information Technology & Engineering, George Mason University |
| 2006 - 2011 | Coordinator, Graduate Program of Systems Engineering & Operations Research, George Mason University |
| 2008 - 2011 | Adjunct Professor, Institute of Industrial Engineering, National Taiwan University, Taipei, Taiwan |
| 2009 (summer) | Visiting Scholar, Microsoft Research Asia Laboratory, Beijing, China |
| 2006 | Visiting Professor, Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan |
| 2000 - 2007 | Associate Professor of Systems Engineering & Operations Research, School of Information Technology & Engineering, George Mason University |
| 1999 | Acting Chairman, Graduate Group of Systems Engineering<br>School of Engineering and Applied Science, University of Pennsylvania |
| 1994-2000 | Assistant Professor of Systems Engineering<br>School of Engineering and Applied Science, University of Pennsylvania |

## Honors and Awards

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| 2005 | Listed in Who'sWho in the World, Who'sWho in Finance and Business, Who'sWho in American Education |
| 2004 | Meritorious Service Award from Operations Research Journal of INFORMS |
| 2003 | "Kayamori Best Automation Paper Award" from the 2003 IEEE International Conference on Robotics and Automation (total 1176 papers submitted for review) |
| 2002 | Listed in Who'sWho in America, Who'sWho in Science and Engineering, and in Who'sWho in Engineering Education |
| 2001 | Elected as IEEE Senior Member |
| 1994 | Harvard University Eliahu I. Jury Award for The Best Thesis in Decision and Control |
| 1992 | MasPar Parallel Computer Challenge Award, Highest Speedup in the Realized Performance |
| 1991 | Harvard University Fellowship |
| 1989 | Chinese Institute of Electrical Engineering Graduation Thesis Contest Award |

# Research

## Publications

### A. Journals

A1 Shortle, J. C. H. Chen, B. Crain, A. Brodsky, D. Brod, "Optimal Splitting for Rare-event Simulation," to appear in *IIE Transactions*, 2011.

A2 Chen, C. H., M. Fu, L. Shi, and L. H. Lee, "Stochastic Systems Simulation Optimization," to appear in *Frontiers of Electrical and Electronic Engineering in China*, 2011.

A3 Chen, C. H., S. E. Chick, L. H. Lee, "Ranking & Selection: Efficient Simulation Budget Allocation," to appear in *Handbook on Simulation Optimization*, (M. Fu, Ed), Springer, 2011.

A4 He, D. and C. H. Chen, "Antithetic Variates," *Encyclopedia of Operations Research and Management Science*, March 2011.

A5 Lee, L. H., C. H Chen, E. P. Chew, J. Li, N. A. Pujowidianto, and S. Zhang, "A Review of Optimal Computing Budget Allocation Algorithms for Simulation Optimization Problem," *International Journal of Operations Research*, Vol. 7, No. 2, pp. 19-31, 2010.

A6 He, D., L. H. Lee, C. H. Chen, M. Fu, and S. Wasserkrug, "Simulation Optimization Using the Cross-Entropy Method with Optimal Computing Budget Allocation," *ACM Transactions on Modeling and Computer Simulation*, Vol. 20, No.1, January 2010.

A7 Chen, C. H., E. Yücesan, L. Dai, and H. C. Chen, "Efficient Computation of Optimal Budget Allocation for Discrete Event Simulation Experiment," *IIE Transactions*, Vol. 42, No. 1, pp. 60-70, January 2010.

A8 Chen, C. H., D. He, M. Fu, and L. H. Lee, "Efficient Simulation Budget Allocation for Selecting an Optimal Subset," *Informs Journal on Computing*, Vol. 20, No. 4, pp. 579-595, 2008.

A9 Chen, C. H., M. Fu, and L. Shi, "Chapter 11. Simulation and Optimization," *Tutorials in Operations Research*, pp. 247-260, Informs, Hanover, MD, 2008.

A10 Le, L., G. L. Donohue, K. Hoffman, and C. H. Chen, "Optimum Airport Capacity Utilization under Congestion Management at NY LaGuardia Airport," *Transportation Planning and Technology Journal*, Vol. 31, No. 1, pp. 93-112, 2007.

A11 Hsieh, B. W., C. H. Chen, S. C. Chang, "Efficient Simulation-based Composition of Scheduling Policies by Integrating Ordinal Optimization with Design of Experiment," *IEEE Transactions on Automation Science and Engineering*, Vol. 4, No. 4, pp. 553-568, October 2007.

A12 He, D., S. E. Chick, C. H. Chen, "The Opportunity Cost and OCBA Selection Procedures in Ordinal Optimization," *IEEE Transactions on Systems, Man, and Cybernetics--Part C*, Vol. 37, No. 5, pp. 951-961, September 2007.

A13 Romero, V. J., and C. H. Chen, "Refinements in a New Adaptive Ordinal Approach to Continuous-Variable Probabilistic Optimization," *AIAA Journal*, Vol. 45, No. 7, pp. 1630-1641, July 2007.

A14 Fu, M. C., J. Q. Hu, C. H. Chen, and X. Xiong, "Simulation Allocation for Determining the Best Design in the Presence of Correlated Sampling," *Informs Journal on Computing*, Vol. 19, No. 1, pp. 101–111, 2007.

A15 Chen, C. H., D. He, and M. Fu, "Efficient Dynamic Simulation Allocation in Ordinal Optimization," *IEEE Transactions on Automatic Control*, Vol. 51, No. 12, pp. 2005-2009, December 2006.

A16 Romero, V. J., D. V. Ayon, C. H. Chen, "Demonstration of Probabilistic Ordinal Optimization Concepts to Continuous-Variable Optimization Under Uncertainty," *Optimization and Engineering*, Vol. 7, No. 3, pp. 343-365, September 2006.

A17 Chen, C. H., and E. Yücesan, "An Alternative Simulation Budget Allocation Scheme for Efficient Simulation," *International Journal of Simulation and Process Modeling*, Vol. 1, Nos. 1/2, pp. 49-57, 2005.

A18 Chen, C. H., and D. He, "Intelligent Simulation for Alternatives Comparison and Application to Air Traffic Management," *Journal of Systems Science and Systems Engineering*, Vol. 14, No. 1, pp. 37-51, March 2005.

A19 Le, L., G. L. Donohue, and C. H. Chen, "Auction-Based Slot Allocation for Traffic Demand Management at Hartsfield Atlanta International Airport: A Case Study," *Journal of the Transportation Research Board*, No. 1888, pp. 50-58, January 2005.

A20 Shortle, J., R. Xie, C. H. Chen, and G. L. Donohue, "Simulating Collision Probabilities of Landing Airplanes at Non-towered Airports," *Simulation: Transactions of the Society for Modeling and Simulation International*, Vol. 80, No. 1, pp. 21-31, 2004.

A21 Tyler, D., C. A. Pasquariello, and C. H. Chen, "Determining Optimum Operating Room Utilization," *Anesthesia and Analgesia*, Vol. 96, pp. 1114-1121, 2003.

A22 Chen, C. H., K. Donohue, E. Yücesan, and J. Lin, "Optimal Computing Budget Allocation for Monte Carlo Simulation with Application to Product Design," *Journal of Simulation Practice and Theory*, Vol. 11, No. 1, pp. 57-74, March 2003.

A23 Chen, C. H., "Chapter 7. Very Efficient Simulation for Engineering Design Problem," *Modeling and Simulation-Based Life Cycle Engineering*, (K. Chong, S. Saigal, S. Thynell, Ed's), pp. 291-302, Spon Press, London, 2002.

A24 Luo, Y. C., C. H. Chen, and M. Guignard-Spielberg, "An Efficient Approach Integrating Genetic Algorithm, Linear Programming, and Ordinal Optimization for Linear Mixed Integer Programming Problems," *International Journal of Smart Engineering System Design*, Vol. 3, pp. 279-287, December 2001.

A25 Hsieh, B. W., C. H. Chen, and S. C. Chang, "Scheduling Semiconductor Wafer Fabrication by Using Ordinal Optimization-Based Simulation," *IEEE Transactions on Robotics and Automation*, Vol. 17, No. 5, pp. 599-608, October 2001.

A26 Luo, Y. C., M. Guignard-Spielberg, and, C. H. Chen, "A Hybrid Approach for Integer Programming Combining Genetic Algorithms, Linear Programming and Ordinal Optimization," *Journal of Intelligent Manufacturing*, Vol. 12, No. 5-6, pp. 509-519, October 2001.

A27 Yücesan, E., Y. C. Luo, C. H. Chen, and I. Lee, "Distributed Web-Based Simulation Experiments For Optimization," *Journal of Simulation Practice and Theory*, Vol. 9, pp. 73-90, September 2001.

A28 Dai, L., C. H. Chen, and J. R. Birge, "Large Convergence Properties of Two-Stage Stochastic Programming," *Journal of Optimization Theory and Applications*, Vol. 106, No. 3, pp. 489-510, September 2000.

A29 Shi, L. and C. H. Chen, "A New Algorithm for Stochastic Discrete Resource Allocation Optimization," *Journal of Discrete Event Dynamic Systems: Theory and Applications*, Vol. 10, pp. 271-294, July 2000.

A30 Chen, C. H., J. Lin, E. Yücesan, and S. E. Chick, "Simulation Budget Allocation for Further Enhancing the Efficiency of Ordinal Optimization," *Journal of Discrete Event Dynamic Systems: Theory and Applications*, Vol. 10, pp. 251-270, July 2000.

A31 Chen, H. C., C. H. Chen, and E. Yücesan, "Computing Efforts Allocation for Ordinal Optimization and Discrete Event Simulation," *IEEE Transactions on Automatic Control*, Vol. 45, No. 5, pp. 960-964, May 2000.

A32 Ho, Y. C., C. G. Cassandras, C. H. Chen, and L. Dai, "Ordinal Optimization and Simulation," *Journal of Operational Research Society*, Vol. 51, No. 4, pp. 490-500, April 2000.

A33 Inoue, K., S. E. Chick, and C. H. Chen, "An Empirical Evaluation of Several Methods to Select the Best System," *ACM Transactions on Modeling and Computer Simulation*, Vol. 9, No. 4, pp. 381-407, October 1999.

A34 Chen, C. H., V. Kumar, and Y. C. Luo, "Motion Planning of Walking Robots in Environments with Uncertainty," *Journal of Robotic Systems*, Vol. 16, No. 10, pp. 527-545, October 1999.

A35 Chen, C. H., S. D. Wu, and L. Dai, "Ordinal Comparison of Heuristic Algorithms Using Stochastic Optimization," *IEEE Transactions on Robotics and Automation*, Vol. 15, No. 1, pp. 44-56, February 1999.

A36 Chen, C. H., V. Kumar, and Y. C. Luo, "Motion Planning of Walking Robots Using Ordinal Optimization," *IEEE Robotics and Automation Magazine*, pp. 22-32, June 1998.

A37 Dai, L. and C. H. Chen, "Rate of Convergence for Ordinal Comparison of Dependent Simulations in Discrete Event Dynamic Systems," *Journal of Optimization Theory and Applications*, Vol. 94, No. 1, pp. 29-54, July 1997.

A38 Patsis, N. T., C. H. Chen, and M. E. Larson, "SIMD Parallel Discrete Event Dynamic System Simulation," *IEEE Transactions on Control Systems Technology*, Vol. 5, No. 3, pp. 30-41, January 1997.

A39 Chen, C. H. "A Lower Bound for the Correct Subset-Selection Probability and Its Application to Discrete Event System Simulations," *IEEE Transactions on Automatic Control*, Vol. 41, No. 8, pp. 1227-1231, August 1996.

A40 Chen, C. H., and Y. C. Ho, "An Approximation Approach of the Standard Clock Method for General Discrete Event Simulation," *IEEE Transactions on Control Systems Technology*, Vol. 3, No. 3, pp. 309-317, September 1995.

A41 Chang, S. C., W. L. Yang, I. K. Fong, and C. H. Chen, "Two Effective Approaches for Hydroelectric Generation Scheduling," *Lecture Notes in Control and Information Sciences*, pp. 133-142, Springer-Verlag, 1990.

A42 Chang, S. C., C. H. Chen, I. K. Fong, and P. B. Luh, "Hydroelectric Generation Scheduling with An Effective Differential Dynamic Programming Algorithm," *IEEE Transactions on Power Systems*, Vol. 5, No. 3, pp. 737-743, August 1990.

**B. Books**

B1 *Stochastic Simulation Optimization: An Optimal Computing Budget Allocation*, (with L. H. Lee), World Scientific Publishing Co., 2011. ISBN: 981-4282-64-2.

B2 *Proceedings of 2002 Winter Simulation Conference*, Co-Editor (with E. Yücesan), contains 281 papers in 2178 printed pages as 2 volumes. ISBN: 0-7803-7614-5. Piscataway, New Jersey: Institute of Electrical and Electronics Engineer.

**C. Book Reviews Published in Refereed Journals**

C1 Chen, C. H., and E. Yücesan, "Review of Introduction to Discrete Event Systems, by Christos G. Cassnadras & Stephane Lafortune," *Automatica*, Vol. 37, No. 10, pp. 1682-1685, August 2001.

C2 Chen, C. H., and E. Yücesan, "Review of Modern Digital Simulation Methodology, Volume II, by Edward J. Dudewicz," *Information Systems and Operations Research*, Vol..37, No. 1, pp. 90-94, 1999.

C3 Chen, C. H., and E. Yücesan, "Review of Modern Digital Simulation Methodology, Volume III, by Edward J. Dudewicz," *Information Systems and Operations Research*, Vol. 37, No. 2, pp. 188-191, 1999.

**D. Refereed Conference Proceedings**

D1 Crain, B., J. Shortle, and C. H. Chen, "Combining Simulation Allocation and Optimal Splitting and for Rare-Event Simulation Optimization," to appear in *Proceedings of 2011 Winter Simulation Conference*, Phoenix, AZ, December 2011.

D2 Masi, D., M. Fischer, J. F. Shortle, C. H. Chen, "Simulating Network Cyber Attacks Using Splitting Techniques," to appear in *Proceedings of 2011 Winter Simulation Conference*, Phoenix, AZ, December 2011.

D3 Hunter, S. R., N. A. Pujowidianto, C. H. Chen, L. H. Lee, R. Pasupathy, and C. M. Yap, "Optimal Sampling Laws for Constrained Simulation Optimization on Finite Sets: The Bivariate Normal Case," to appear in *Proceedings of 2011 Winter Simulation Conference*, Phoenix, AZ, December 2011.

D4 Chen, P., L. H. Lee, and C. H. Chen, "Simulation Optimization Using the Particle Swarm Optimization with Optimal Computing Budget Allocation," to appear in *Proceedings of 2011 Winter Simulation Conference*, Phoenix, AZ, December 2011.

D5 Farley, S., A. Brodsky, C. H. Chen, "A Simulation Query Language for Defining and Analyzing Uncertain Data, *Proceedings of 13th International Symposium on Database Programming Languages*, Seattle, WA, August 2011.

D6 Wang, S. B., A. Chen, C. W. Liu, C. H. Chen, and J. Shortle, "Rare-event Splitting Simulation for Analysis of Power System Blackouts," *Proceedings of 2011 IEEE Power & Energy Society General Meeting*, Detroit, Michigan, July 2011.

D7 Yan, S., E. Zhou, and C. H. Chen, "Efficient Simulation Budget Allocation for Selecting the Best Set of Simplest Good Enough Designs," *Proceedings of 2010 Winter Simulation Conference*, pp. 1152-1159, Baltimore, MD, December 2010.

D8 Fischer, M, D. Masi, J. F. Shortle, C. H. Chen, "Simulating Non-Stationary Congestion Systems Using Splitting with Applications to Cyber Security," *Proceedings of 2010 Winter Simulation Conference*, pp. 2865-2875, Baltimore, MD, December 2010.

D9 Pujowidianto, N. A., L. H. Lee, C. H. Chen, C. M. Yep, "Optimal Computing Budget Allocation For Constrained Optimization," *Proceedings of 2009 Winter Simulation Conference*, pp. 584-589, Austin, TX, December 2009.

D10 Morrice, D. J., M. W. Brantley, and C. H. Chen, "A Transient Means Ranking and Selection Procedure with Sequential Sampling Constraints," *Proceedings of 2009 Winter Simulation Conference*, pp. 590-600, Austin, TX, December 2009.

D11 Fu, M, C. H. Chen, and L. Shi, "Some Topics for Simulation Optimization," *Proceedings of 2008 Winter Simulation Conference*, pp. 27-38, Miami, FL, December 2008.

D12 Shortle, J., and C. H. Chen, "A Preliminary Study of Optimal Splitting for Rare-Event Simulation," *Proceedings of 2008 Winter Simulation Conference*, pp. 266-272, Miami, FL, December 2008.

D13 Morrice, D. J., M. W. Brantley, and C. H. Chen, "An Efficient Ranking and Selection Procedure for a Linear Transient Mean Performance Measure," *Proceedings of 2008 Winter Simulation Conference*, pp. 290-296, Miami, FL, December 2008.

D14 Brantley, M. W., L. H. Lee, C. H. Chen, and A. Chen, "Optimal Sampling in Design of Experiment for Simulation-based Stochastic Optimization," *Proceedings of 2008 IEEE Conference on Automation Science and Engineering*, pp. 388-393, Washington, DC, August 2008.

D15 Hall, N., T. Van Dyke, and C. H. Chen, "Efficient Allocation of Simulation Computing Budget to Select One of The Best Designs," *Proceedings of Inaugural International Conference of the Engineering Mechanics Institute*, Minneapolis, MN, May 2008.

D16 Wang, L., T. Thompson, L. Sherry, C. H. Chen, "Greensim - A Tool for Airport Operations Analysis: Delays, Emission, Fuel and Cost," *Proceedings of 2008 Transportation Research Board Annual Meeting*, Washington, DC, January 2008.

D17 Chen, C. H., D. He, M. Fu, and L. H. Lee, "Efficient Selecting An Optimal Subset for Optimization Under Uncertainty," *Proceedings of 2007 Informs Simulation Research Workshop*, pp. 47-51, Fontainebleau, France, July 2007.

D18 Xu, N., K. Laskey, C. H. Chen, and S. C. Williams, "Bayesian Network Analysis of Flight Delays," *Proceedings of 2007 Transportation Research Board Annual Meeting*, Washington, DC, January 2007.

D19 Le, L., G. L. Donohue, K. Hoffman, and C. H. Chen, "Airport Slot Controls Are Required to Make NGATS Modernization Work," *Proceedings of 51st ATCA Annual Conference & Exposition*, pp. 102-117, Washington, DC, October 2006.

D20 Laskey, K., N. Xu, and C. H. Chen, "Propagation of Delays in the National Airspace System," *Proceedings of the 22nd Conference on Uncertainty in Artificial Intelligence*, Cambridge, MA, July 2006.

D21 Brantley, M. W., C. H. Chen, "A Moving Mesh Approach for Simulation Budget Allocation on Continuous Domains," *Proceedings of the 2005 Winter Simulation Conference*, Orlando FL, pp. 699-707, December 2005.

D22 Xu, N., G. Donohue, K. Laskey, and C. H. Chen, "Estimation of Delay Propagation in the NAS Using Bayesian Networks," *Proceedings of 2005 Air Traffic Management Seminar*, Baltimore, MD, June 2005.

D23 Fu, M. C., J. Q. Hu, C. H. Chen, and X. Xiong, "Optimal Computing Budget Allocation Under Correlated Sampling," *Proceedings of the 2004 Winter Simulation Conference*, Washington, pp. 595-603, DC, December 2004.

D24 Romero, V. J., and C. H. Chen, "Seminal Concepts for a New Approach to Continuous-Variable Optimization Under Uncertainty: Probabilistic Ordinal Optimization," *Proceedings of 10th AIAA Multidisciplinary Analysis and Optimization Conference*, Albany NY, September 2004.

D25 Chen, C. H., and D. He, "Intelligent Simulation for Evaluating Alternatives and Application to Air Traffic Management," *Proceedings of 2004 International Conference on Service Systems and Service Management*, July 2004.

D26 Chen, C. H., D. He, and M. Fu, "A Case Study for Optimal Dynamic Simulation Allocation in Ordinal Optimization," *Proceeding of American Control Conference*, pp. 5754-5759, Boston, June 2004, **won the Best Presentation Award in Session**.

D27 Le, L., G. L. Donohue, and C. H. Chen, "Using Auction-Based Slot Allocation for Traffic Demand Management at Hartsfield Atlanta International Airport: A Case

Study," *Proceedings of 2004 Transportation Research Board Annual Meeting*, Washington, DC, January 2004.

D28 Chen, C. H., D. He, and E. Yücesan, "Better-Than-Optimal Simulation Run Allocation," *Proceedings of the 2003 Winter Simulation Conference*, pp. 490-495, New Orleans, December 2003.

D29 Hsieh, B. W., S. C. Chang, C. H. Chen, and M. C. Chang, "Efficient Composition of Good Enough Dispatching Policies for Semiconductor Manufacturing," *Proceedings of the Twelfth International Symposium on Semiconductor Manufacturing*, San Jose, CA, October 2003.

D30 Le, L., G. L. Donohue, and C. H. Chen, "Space-time Correlation Analysis of Quality-of-Service at Major US Airports," *Proceedings of 22nd Digital Avionics Systems Conference, Indianapolis*, Indiana, October 2003.

D31 Chen, C. H. "Efficient Sampling for Simulation-based Optimization under Uncertainty," *Proceedings of the Fourth International Symposium on Uncertainty Modeling and Analysis*, pp. 386-391, College Park, MD, September 2003.

D32 Romero, V. J., D. V. Ayon, C. H. Chen, "Application of Probabilistic Ordinal Optimization Concepts to a Continuous-Variable Probabilistic Problem," *Proceedings of the Fourth International Symposium on Uncertainty Modeling and Analysis*, pp. 410-416, College Park, MD, September 2003.

D33 Hsieh, B. W., S. C. Chang, and C. H. Chen, "Dynamic Scheduling Rule Selection for Semiconductor Wafer Fabrication," *Proceedings of the 2003 IEEE International Conference on Robotics and Automation*, pp. 163-168, Taipei, Taiwan, September 2003, **received the "Kayamori Best Automation Paper Award" from the conference**.

D34 Le, L., S. Kholfi, G. L. Donohue, and C. H. Chen, "Proposal for Demand Management Using Auction-Based Arrival Slot Allocation," *Proceedings of the 5th EUROCONTROL / FAA ATM R&D Seminar*, Budapest, Hungary, June 2003.

D35 Shortle, J. F., Y. Xie, C. H. Chen, and G. M. Donohue, "Estimating Collision Probabilities of Landing Airplanes in a Small Aircraft Transportation System," *Proceedings of 2003 Transportation Research Board Annual Meeting*, Washington, DC, January 2003.

D36 Chen, C. H. and J. Lin, "Optimal Computing Budget Allocation Methods for Simulation Measurement of Network Performance," *Proceedings of 2003 Transportation Research Board Annual Meeting*, Washington, DC, January 2003.

D37 Hsieh, B. W., S. C. Chang, and C. H. Chen, "Design of Ordinal Optimization-based Simulation Methods for Efficient Scheduling Rule Selection for Fab Operations," *Proceedings of Semiconductor Manufacturing Technology Workshop*, Hsin-Chu, Taiwan, December 2002.

D38 Chen, C. H. and E. Yücesan, "Intelligent Monte Carlo Sampling for Decision Making Under Uncertainty," *Proceedings of 2002 IASTED International Conference on Modeling and Simulation*, pp 356-361, Marina del Rey, CA, May 2002.

D39 Donohue, G., M. Luo, C. H. Chen, and R. Holland, "Modeling the Performance of the National Airspace System," *Proceedings of 2002 Transportation Research Board Annual Meeting*, Washington, DC, January 2002.

D40 Romero, V. J. and C. H. Chen, "Use of Probabilistic Ordinal Optimization for Continuous-Variable Optimization Under Uncertainty," *Proceedings of the 1st Annual McMaster Optimization Conference: Theory and Applications*, Montreal, Canada, August 2001.

D41 Hsieh, B. W., S. C. Chang, and C. H. Chen, "Dynamic Scheduling Rule Selection for Semiconductor Wafer Fabrication," *Proceedings of the 2001 IEEE International Conference on Robotics and Automation*, Seoul, Korea, May 2001.

D42 Chen, C. H., K. Donohue, J. Lin, and E. Yücesan, "Efficient Approach for Monte Carlo Simulation Experiments and Its Applications to Circuit Systems Design," *Proceedings of the 34th Annual Simulation Symposium*, pp. 65-71, Seattle, WA, April 2001.

D43 Yücesan, E. and C. H. Chen, "Optimal Computing Budget Allocation for Discrete Event Simulation," *Proceedings of ctes de la 3e Conference Francophone de Modelisation et Simulation*, pp. 39-45, Troyes, France, April 2001.

D44 Luo, Y. C., C. H. Chen, E. Yücesan, and I. Lee, "Distributed Web-Based Simulation Optimization," *Proceedings of the 2000 Winter Simulation Conference*, pp. 1785-1793, Orlando, FL, December 2000.

D45 Chen, C.-H., P. Hahn, J. Lin, and E. Morlok, "Web-Based Simulation and Decision Support System for Bulk Mail (Parcel) Network Planning," *Proceedings of the 42nd Annual Meeting of the Transportation Research Forum*, pp. 283-292, Annapolis, MD, November 2000.

D46 Tyler, D., and C. H. Chen, "Operating Room Utilization: Determination of Optimum Utilization," *Proceedings of the 2000 Annual Meeting of the American Society of Anesthesiologists*, October 2000.

D47 Luo, Y. C., M. Guignard-Spielberg, and, C. H. Chen, "A Hybrid Approach for Integer Programming Combining Genetic Algorithms, Linear Programming and Ordinal Optimization," *Proceedings of the Latin-Ibero-American Conference on Operations Research and Systems*, September 2000.

D48 Chen, H. C., C. H. Chen, E. Yücesan, and J. Lin, "An Asymptotic Allocation for Simultaneous Simulation Experiments," *Proceedings of the 1999 Winter Simulation Conference*, pp. 359-366, December 1999.

D49 Shi, L., C. H. Chen, and E. Yücesan, "Simultaneous Simulation Experiments and Nested Partition for Discrete Resource Allocation in Supply Chain Management," *Proceedings of the 1999 Winter Simulation Conference*, pp. 395-401, December 1999.

D50 Shi, L., and C. H. Chen, "Stochastic Discrete Resource Allocation Optimization," *Proceedings of 38th IEEE Conference on Decision and Control*, December 1999.

D51 Hsieh, B. W., C. H. Chen, and S. C. Chang, "Fast Fab Scheduling Rule Selection by Ordinal Comparison-Based Simulation," *Proceedings of The International Symposium on Semiconductor Manufacturing*, October 1999.

D52 Dai, L., C. H. Chen, and J. R. Birge, "Exponential Convergence of Two-Stage Stochastic Programming," *Proceedings of The 14th World Congress of International Federation of Automatic Control*, July 1999.

D53 Dai, L., C. H. Chen, and J. R. Birge, "On the Convergence Rate of Ordinal Optimization for A Class of Stochastic Discrete Resource Allocation," *Proceedings of 37th IEEE Conference on Decision and Control*, pp. 3880-3885, December 1998.

D54 Chen, C. H., E. Yücesan, Y. Yuan, H. C. Chen and L. Dai, "Computing Budget Allocation for Simulation Experiments with Different System Structures," *Proceedings of the 1998 Winter Simulation Conference*, pp. 735-741, December 1998.

D55 Yücesan, E., C. H. Chen, and I. Lee, "Web-Based Simulation Experiments," *Proceedings of the 1998 Winter Simulation Conference*, pp. 1649-1654, December 1998.

D56 Hsieh, B. W., C. H. Chen, and S. C. Chang, "Dispatching Rule Selection for Semiconductor Wafer Fabrication by Ordinal Optimization and Simulation," *Proceedings of the Rensselaer's Sixth International Conference on Agile, Intelligent, and Computer Integrated Manufacturing*, October 1998.

D57 Chen, C. H., L. Dai, and E. Yücesan, "Optimal Way to Find The Optimal Design for Discrete Event Simulation Experiments," *Proceedings of the SPIE's 12 Annual International Symposium on Aerospace/Defense Sensing, Simulation, and Controls*, pp. 238-248, April 1998.

D58 Chen, H. C., C. H. Chen, L. Dai, and E. Yücesan, "New Development of Optimal Computing Budget Allocation For Discrete Event Simulation," *Proceedings of the 1997 Winter Simulation Conference*, pp. 334-341, December 1997.

D59 Chen, C. H., S. D. Wu, and L. Dai, "Algorithm Comparison for Manufacturing Scheduling Problems," *Proceedings of the 36th IEEE Conference on Decision and Control*, pp. 1214-1215, December 1997.

D60 Dai, L. and C. H. Chen, "On The Role of Large Deviation Principle in Ordinal Comparison for Discrete Event Dynamic Systems," *Proceedings of the 36th IEEE Conference on Decision and Control*, pp. 674-679, December 1997.

D61 Chen, C. H., K. Donohue, L. Dai, and E. Yücesan, "Intelligent Computing Budget Allocation for Discrete Event Simulation and Optimization," *Proceedings of the 1997 Intelligent Systems and Semiotics Conference*, pp. 185-190, September 1997.

D62 Dai, L. and C. H. Chen, "Comparison of Performance Orders of Different Designs for Discrete-Event Dynamic Systems," *Proceedings of the 1997 Intelligent Systems and Semiotics Conference*, pp. 191-196, September 1997.

D63 Dai, L. and C. H. Chen, "The Large Deviation principle and Ordinal Comparison in Discrete Event Dynamic Systems," *Proceedings of The Second Chinese World Congress on Intelligent Control and Intelligent Automation,* June 1997.

D64 Chen, C. H., H. C. Chen, and L. Dai, "A Gradient Approach of Smartly Allocating Computing Budget for Discrete Event Simulation," *Proceedings of the 1996 Winter Simulation Conference,* pp. 398-405, December 1996.

D65 Dai, L. and C. H. Chen, "The Effect of Correlation on Ordinal Comparison of Discrete Event Dynamic Systems," *Proceedings of the 35th IEEE Conference on Decision and Control*, December 1996.

D66 Chen, C. H. and L. Dai, "Intelligent Computing Budget Allocation for Stochastic Simulation," *Proceedings of the 1996 Artificial Neural Networks in Engineering Conference,* pp. 1105-1110, November 1996.

D67 Chen, C. H. and V. Kumar, "Motion Planning of Walking Robots in Environments with Uncertainty," *Proceedings of the 1996 IEEE International Conference on Robotics and Automation*, pp. 3277-3282, April 1996.

D68 Chen, C. H. "An Effective Approach to Smartly Allocate Computing Budget for Discrete Event Simulation," *Proceedings of the 34th IEEE Conference on Decision and Control*, pp. 2598-2605, December 1995.

D69 Chen, C. H. "A Hybrid Approach of the Standard Clock Method and Event Scheduling Approach for General Discrete Event Simulation," *Proceedings of the 1995 Winter Simulation Conference*, pp. 786-790, December 1995.

D70 Chen, C. H. and V. Kumar, "An Application of Ordinal Optimization to A Robot Motion Planning Problem," *Proceedings of the 33rd Annual Allerton Conference on Communication, Control, and Computing*, pp. 116-125, October 1995.

D71 Chang, S. C., C. H. Chen, and I. K. Fong, "An Effective Differential Dynamic Programming for Constrained Optimal Control Problems," *Proceedings of the 1989 American Control Conference*, Pittsburgh, PA, pp. 2678-2683, June 1989.

D72 Chen, C. H., S. C. Chang, and I. K. Fong, "A Parallel Algorithm for the Time Decomposition Approach to Constrained Optimal Control Problems," *Proceedings of the 1989 American Control Conference*, Pittsburgh, PA, pp. 1763-1764, June 1989.

D73 Chen, C. H., S. C. Chang, and I. K. Fong, "A Multiplier Method-Based Differential Dynamic Programming Algorithm," *Proceedings of the 12th National Symposium on Automatic Control*, Hsin-Chu, Taiwan, pp. 481-491, December 1988.

D74 Chen, C. H., P. B. Luh, J. Shi, S. C. Chang, and I. K. Fong, "Wave-Form Decomposition for Large-Scale Optimal Control Problems," *Proceedings of the Second National Workshop on Automatic Technology*, Kengting, Taiwan, pp. 483-492, April 1988.

**E. Other Publications (Non-Refereed Conferences, Technical Reports, etc.)**

E1 Shortle J. F., and C. H. Chen, "What Can Lead to a Wide-Scale Blackout?" *SIGMA*, pp 11-15, September 2010.

E2 Romero, V. J., and C. H. Chen, "Development of a New Adaptive Ordinal Approach to Continuous-Variable Probabilistic Optimization," Technical Report SAND2006-5319, Sandia National Laboratories, Department of Energy, November 2006.

E3 Chen, C. H., and S. D. Wu, "Very Efficient Simulation for Engineering Design Problems," *Proceedings of 2003 NSF Design, Service and Manufacturing Grantees and Research Conference*, Birmingham, AL, January 2003.

E4 Chen, C. H., and S. D. Wu, "Very Efficient Simulation for Engineering Design Problems," *Proceedings of 2001 NSF Design, Service and Manufacturing Grantees and Research Conference*, Tampa, FL, January 2001.

E5 Belknap, M. H., C. H. Chen, and P. T. Harker, "A Gradient-Based Method for Analyzing Stochastic Variational Inequalities with One Uncertain Parameter," Working Paper #00-03-13, Department of Operations and Information Management, The Wharton School, University of Pennsylvania, January 2000.

E6 Chen, C. H., K. Donohue, S. D. Wu, "An Engineering Design Framework Integrating Robust Optimization and Structured Simulation Experiments," *Proceedings of 2000 NSF Design and Manufacturing Grantees Conference*, January 2000.

E7 Chen, C. H., K. Donohue, S. D. Wu, "An Engineering Design Framework Integrating Robust Optimization and Structured Simulation Experiments," *Proceedings of 1999 NSF Design and Manufacturing Grantees Conference*, January 1999.

E8 Chen, C. H., L. Dai, and E. Yucesan, "Optimal Way to Find the Optimal Design for Discrete Event Simulation Experiments," *Proceedings of the 1998 SPIE AeroSense Symposium*, April 1998.

E9 Chen, C. H. and V. Kumar, "Motion Planning of Walking Robots in Environments with Uncertainty," Working Paper #95-12, Department of Systems Engineering, University of Pennsylvania, 1995.

E10 Chen, C. H. "Confidence Level Quantification and Optimal Computing Budget Allocation for Discrete Event System Simulations," Working Paper #94-08, Department of Systems Engineering, University of Pennsylvania, 1994.

E11 Chen, C. H. "An Approximation Approach of the Standard Clock Method for General Discrete Event Simulation," Working Paper #94-07, Department of Systems Engineering, University of Pennsylvania, 1994.

E12 Chen, C. H., "An Effective Approach for Discrete Event Systems Decision problem," *Ph.D. Thesis*, Division of Applied Sciences, Harvard University, May 1994.

E13 Chen, C. H., "Development, Application and Parallelization of An Effective Dynamic Programming Algorithm for Optimal Control Problems," *Master Thesis*, Dept. of E.E. National Taiwan University, Taiwan, June 1989.

## Funded Research Projects

1. "Using GIS and Simulation for Analyzing Optimal Geographical Boundaries and Organ Allocation Mechanism for Liver Transplant", NIH, Co-PI, with N. Koizumi, $400,000, 8/1/10 - 3/31/12.
2. "New Approaches for Rare-Event Simulation and Decision Making," Department of Energy, Co-PI, with J. Shortle, $747,980, 9/15/09 - 9/14/12.
3. "Funding Support for the First Informs Simulation Research Workshop," NSF, Co-PI, with S. Henderson, $19,500, 2007.
4. "Analysis of NGATS Sensitivity to Gaming," NASA Ames Research Center, CA, Co-PI, with L. Sherry, $1,451,075, 10/1/06 - 9/30/10.
5. "Research on Simulation-based Ordinal Optimization Methods with Applications to Production Scheduling of 300mm Foundry Fabs," National Science Council of Taiwan, ROC, Co-PI, with S.-C. Chang, $11,500, 04/10/06 - 07/09/06.
6. "IV&V Support for NASA ACES Models using TAAM Simulation Model and Bayesian Networks," NASA Ames Research Center, CA, PI, $464,738, 09/01/05 - 08/31/08.
7. "Evaluation of the Effects of Stochastic Reduced Wake Vortex Separation Arrival/Departure Flows on Runway Capacity," NASA Langley Research Center, Co-PI, with J. Shortle, $417,185, 01/01/05 - 12/31/06.
8. "Modeling and Analysis to Support Decision Making in The Area of Resource Allocation," NIST, through the National Capital Region Critical Infrastructure Protection Project, Co-PI, with A. Loerch, $52,337, 01/01/05 - 12/31/05.
9. "Research Experiences for Undergraduates", National Science Foundation, PI, $6,000, 05/03/04 - 08/31/08.
10. "Optimal Computing Budget Allocation for Stochastic Simulation," Provost Office of George Mason University, PI, $5,000, 02/01/04 - 06/30/05.
11. "Safety Assessment of Wake Vortex Separation Standards and Avoidance Technologies," NASA Langley Research Center, Co-PI, with J. Shortle, $329,862, 9/01/03 - 12/31/04.
12. "ITR: Very Efficient Network Simulation Methods for Auctioning and Collaborative Models of Air Traffic Management," National Science Foundation, PI, with A. Deshmukh, G. Donohue, K. Hoffman, and D. Gross, $1,082,946, 09/01/03 - 8/31/08.
13. "IV&V Support, Efficient Air Traffic Management Modules for NASA VAMS Models," NASA Ames Research Center, CA, Co-PI, with G. Donohue, $251,367, 8/01/03 - 9/30/2005.
14. "Hercules - MDA Algorithm Development and Analysis," Missile Defense Agency, Co-PI, with K. Chang and K. Laskey, $900,000, 07/01/03 - 06/30/06.
15. "Air Traffic Control Model Evaluations," FAA Technical Center, Co-PI, with G. Donohue, $259,816, 08/01/02 - 07/31/05.

16. "An Efficient Air Traffic Management Model for Evaluation of Complex Behavior in and IV&V Support of other NASA ATM Models," NASA Ames Research Center, CA, Co-PI, with G. Donohue, $250,808, 06/01/02 - 5/31/03.
17. "Graduate Research Assistant Award," Provost Office of George Mason University, PI, $20,858 , 08/25/02 - 05/24/03.
18. "Small Aircraft Transportation System: The Virginia SATSLab Analysis, Operational Evaluation and Mission Demonstrations," NASA, Co-PI, with G. Donohue, M. Bienvenu, D. Boehm-Davis, L Adelman, K. C. Chang, J. Shortle, $2,500,000, 08/01/01-09/30/02.
19. "Intelligent Simulation Experiment for Decision Making and Design Problems," Provost Office of George Mason University, PI, $5,000, 02/01/01 - 06/30/02.
20. "Very Efficient Simulation for Engineering Design Problems," National Science Foundation, PI, $80,000, 07/01/00 - 06/30/03.
21. "A Simulation Approach for Stochastic Variational Inequalities Problems," Research Foundation, University of Pennsylvania, PI, $3,000, 01/24/00 - 01/24/01.
22. "GAANN Fellowships in Robotics Technology," U.S. Department of Education, CoPI, with V. Kumar, R. Bajcsy, M. Mintz, R. Paul, $1,512,250, 08/15/98 - 08/14/01.
23. "An Engineering Design Framework Integrating Robust Optimization and Structured Simulation Experiments," Sandia National Laboratories, PI, with K. Donohue, $25,000, 07/21/98 - 07/20/99.
24. "An Engineering Design Framework Integrating Robust Optimization and Structured Simulation Experiments," National Science Foundation, PI, with K. Donohue, and S. D. Wu, $50,000, 03/01/98 - 02/28/00.
25. "An Integer Programming Approach Integrating Simulation and Ordinal Optimization," Research Foundation, University of Pennsylvania, PI, with M. Guignard-Spielberg, $4,928, 01/01/98 - 12/31/98.
26. "Research on Statistical Production Flow Control of a Re-entrant Line," Taiwan National Science Council, Taiwan, CoPI, with S.-C. Chang, NT$750,480 (~$30,000), 07/01/97 - 06/30/98.
27. "Algorithms for Motion Planning, Sensing, Simulation and Execution," Army Research Office, CoPI, with R. Bajcsy, P. Harker, V. Kumar, $110,000, 01/01/97 - 12/31/97.
28. "Acquisition of Equipment for a Customized Production Systems Laboratory," National Science Foundation, CoPI, with V. Kumar, P. Harker, M Cohen, D. Bogen, N. Badler, $473,238, 09/01/95 - 08/31/97.
29. "An Efficient Discrete Event Simulation Environment," Research Foundation, University of Pennsylvania, PI, $12,000, 01/01/95 - 12/31/96.

# Talks/Presentations

## A. Invited Talks at Universities

A1 "Stochastic Simulation and Optimization: An Optimal Computing Budget Allocation," Division of Systems Engineering, Boston University, Boston, MA, April 2011.

A2 "Optimal Computing Budget Allocation for Efficient Integration of Simulation with Optimization," Department of Industrial and Systems Engineering, Virginia Tech, Blacksburg, VA, February, 2011.

A3 "Integration of Simulation with Optimization," National Chengkung University, Taiwan, December 2010.

A4 "Integration of Stochastic Simulation with Optimization," Department of Operations Management, School of Business, University of Warwick, UK, October 2010.

A5 "Integration of Stochastic Simulation with Optimization," Workshop on Simulation Optimization and Maritime Logistics, Department of Industrial and Systems Engineering, National University of Singapore, Singapore, October 2010.

A6 "Stochastic Simulation and Optimization," Department of Management Science, Fudan University, Shanghai, China, July 2010.

A7 "Stochastic Simulation and Optimization," Department of Industrial and Enterprise Systems Engineering, University of Illinois at Urbana-Champaign, April 2010.

A8 "Stochastic Simulation and Optimization," Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, December 2009.

A9 "Stochastic Simulation and Optimization," Department of Electrical Engineering, National Tsing Hua University, Hsin Chu, Taiwan, December 2009.

A10 "Ordinal Optimization and Optimal Computing Budget Allocation," Department of Automation, Tsinghua University, Beijing, China, June 2009.

A11 "Systems Engineering and Operations Research: A Synergy for Education and Research," Department of Industrial and Systems Engineering, National University of Singapore, Singapore, November 2008 (jointly given with Ariela Sofer).

A12 "Efficient Stochastic Simulation and Optimization," Department of Electrical Engineering and Department of Computer Science and Information Engineering, Cheng Shiu University, Kaohsiung, Taiwan, August 2008.

A13 "Research Methods, Proposal Writing, and Publications in Academia," Department of Early Childhood Education, Cheng Shiu University, Kaohsiung, Taiwan, August 2008.

A14 "Stochastic Simulation and Optimization," Department of Industrial and Systems Engineering, National University of Singapore, Singapore, July 2008.

A15 “Efficient Stochastic Simulation and Optimization,” Department of Industrial Engineering and Management, Yuan Ze University, Taoyuan, Taiwan, July 2008.

A16 "Optimal Computing Resource Allocation for Efficient Simulation," joint seminar at Department of Information, Risk, and Operations Management and Department of Mechanical Engineering, The University of Texas at Austin, April 2007.

A17 "Efficient Simulation for Decision Making under Uncertainty," Department of Operations Research, Naval Postgraduate School, Monterey, CA, December 2006.

A18 "Efficient Simulation-based Stochastic Optimization and Its Application to Network Design and Management," Department of Electrical and Computer Engineering, New Jersey Institute of Technology, Newark, NJ, November 2006.

A19 "Efficient Simulation-based Stochastic Optimization and Its Application to Network Design and Management," Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, April 2006.

A20 "Efficient Stochastic Simulation for Decision Making Under Uncertainty," Department of Information Management, National Chung-Cheng University, Chia-Yi, Taiwan, April, 2006.

A21 "Fast Simulation-based Optimization for Stochastic Systems Design," Department of Engineering Management & Systems Engineering, University of Missouri, Rolla, MO, March 2005.

A22 "Fast Simulation-based Optimization for Stochastic Systems Design," Center for Intelligent and Networked Systems, Tsinghua University, Beijing, China, July 2004.

A23 "Management of US National Air Traffic System," Civil Aviation University of China, Tianjing, China, July 2004.

A24 "Fast Simulation and Optimization for Decision Making under Uncertainty," Department of Mechanical & Industrial Engineering, University of Massachusetts, Amherst, MA, October 2002.

A25 "Fast Simulation and Optimization for Discrete-Event Systems," Department of Electrical and Computer Engineering, University of Colorado, Boulder, CO, September 2002.

A26 "Efficient Simulation for Decision Making under Uncertainty," Technology Management Area, INSEAD, Fontainebleau, France, April 2002.

A27 "Optimal Computing Budget Allocation for Efficient Simulation," Operations Research Center, MIT, Cambridge, MA, April 2002.

A28 "Fast Simulation for Efficient Decision Making with Uncertainty," Department of Electrical Engineering, National Tsing-Hua University, Hsing-Chu, Taiwan, January 2002.

A29 "Intelligent Simulation for Efficient Decision Making with Uncertainty," Department of Information Management, National Chi-Nan University, Pu-Li, Taiwan, January 2002.

A30 "Very Efficient Simulation Approach for Design Problems with Uncertainty," Department of Industrial and Manufacturing. Systems Engineering, Lehigh University, Bethlehem, PA, January 2001.

A31 "Very Efficient Simulation-Based Decision Approach for Problems with Uncertainty," The Robert H. Smith School of Business, University of Maryland, College Park, MD, November 2000.

A32 "Very Efficient Simulation-Based Decision Approach for Problems with Uncertainty," Department of Industrial Engineering, Rutgers University, Piscataway, NJ, October 2000.

A33 "Stochastic Simulation and Optimization," Department of Systems Engineering and Operations Research, George Mason University, Fairfax, VA, March 2000.

A34 "Very Efficient Stochastic Simulation for Manufacturing Design Problems," Department of Electronics Engineering, Jin-Wen Institute of Technology, Taiwan, December 1999.

A35 "A Very Efficient Stochastic Simulation and Decision Approach and Its Applications," Department of Industrial Engineering and Operations Research, University of California, Berkeley, CA, March 1999.

A36 "A Very Efficient Stochastic Simulation and Decision Approach and Its Applications to Manufacturing Design Problems," Department of Electrical and Computer Engineering, University of California, Davis, CA, March 1999.

A37 "A Very Efficient Stochastic Simulation and Decision Approach With Applications to Manufacturing Problems," Department of Civil Engineering, University of Maryland, College Park, MD, December 1998.

A38 "A Very Efficient Stochastic Simulation and Decision Approach With Applications to Manufacturing Problems," Department of Industrial Engineering, University of Wisconsin, Madison, WI, November 1998.

A39 "A Super Engine for Stochastic Decision Problems and Its Application to Manufacturing Design Problems," Department of Industrial and Manufacturing. Systems Engineering, Lehigh University, Bethlehem, PA, January 1997.

A40 "A Super Engine for Stochastic Decision Problems and Its Applications," Department of Systems Science and Mathematics, Washington University, St. Louis, MO, November 1996.

A41 "A New Stochastic Simulation and Decision Approach With Application to Manufacturing Design Problems," Institute of Industrial Engineering, National Taiwan University, Taipei, Taiwan, June 1996.

A42 "Ordinal Optimization and Optimal Computing Budget Allocation for Discrete Event Simulation," Department of Electrical and Computer Engineering, University of Massachusetts, Amherst, MA, March 1996.

A43 "An Efficient Approach to Discrete-Event Simulation and Decision Problems," The GRASP Laboratory, University of Pennsylvania, October 1994.

A44 "An Efficient Approach to Discrete-Event Simulation and Decision Problems," Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, July 1994.

A45 "An Efficient Approach to Discrete-Event Simulation and Decision Problems," Department of Electrical and Systems Engineering, University of Connecticut, February 1994.

## B. Invited Presentations at Conferences

B1 "Efficient Simulation Budget Allocation for Selecting the Best Set of Simplest Good Enough Designs," 2010 Winter Simulation Conference, Baltimore, MD, December 2010.

B2 "Simulating Non-Stationary Congestion Systems Using Splitting with Applications to Cyber Security," 2010 Winter Simulation Conference, Baltimore, MD, December 2010.

B3 "Selection of a Good Enough Subset with Descriptive Complexity Preference," 2010 Informs Annual Meeting, Austin, TX, November 2010.

B4 "An Empirical Analysis of Transient Mean Ranking and Selection," 2010 Informs Annual Meeting, Austin, TX, November 2010.

B5 "Optimal Computing Budget Allocation for Subset Selection," 2010 Informs Annual Meeting, Austin, TX, November 2010.

B6 "Application of Splitting Methods to Rare-event Problems in Power Grids," 2010 Informs Annual Meeting, Austin, TX, November 2010.

B7 **Keynote Lecture.** "Simulation Optimization," 2010 Summer Workshop on Operations Research and Supply Chain Management, Taipei, Taiwan, July 2010.

B8 "Optimal Computing Budget Allocation For Constrained Optimization," 2009 Winter Simulation Conference, Austin, TX, December 2009.

B9 "A Transient Means Ranking and Selection Procedure with Sequential Sampling Constraints," 2009 Winter Simulation Conference, Austin, TX, December 2009.

B10 "Optimal Level Splitting for Rare-Event Simulation," 2009 Informs Annual Meeting, San Diego, CA, October 2009.

B11 "Tutorial: Some Topics for Simulation Optimization," 2008 Winter Simulation Conference, Miami, FL, December 2008.

B12 "A Preliminary Study of Optimal Splitting for Rare-Event Simulation," 2008 Winter Simulation Conference, Miami, FL, December 2008.

B13 "An Efficient Ranking and Selection Procedure for a Linear Transient Mean Performance Measure," 2008 Winter Simulation Conference, Miami, FL, December 2008.

B14 "Model-based Computing Budget Allocation for Queuing System Simulation," 2008 Informs Annual Meeting, Washington, DC, October 2008.

B15 “A Ranking and Selection Procedure for a Transient Mean Performance Measure,” 2008 Informs Annual Meeting, Washington, DC, October 2008.

B16 “Optimal Computing Allocation for Rare-Event Decision Problems,” 2008 Informs Annual Meeting, Washington, DC, October 2008.

B17 “Tutorial: Simulation and Optimization,” 2008 Informs Annual Meeting, Washington, DC, October 2008.

B18 “Efficient Allocation of Simulation Computing Budget to Select One of The Best Designs,” Inaugural International Conference of the Engineering Mechanics Institute, Minneapolis, MN, May 2008.

B19 **Plenary Talk.** "Efficient Simulation for Decision Making under Uncertainly," 2007 International Conference on Modeling and Simulation, Coimbatore, India, August 2007.

B20 "Efficient Computing Resource Allocation for Simulation Optimization," 2007 Informs International Conference, Puerto Rico, July 2007.

B21 "Efficient Selecting An Optimal Subset for Optimization Under Uncertainty," 2007 Informs Simulation Research Workshop, Fontainebleau, France, July 2007.

B22 "A Moving Mesh Approach for Simulation Budget Allocation on Continuous Domains," 2005 Winter Simulation Conference, Orlando FL, December 2005.

B23 "OCBA Selection Procedures for Opportunity Cost," 2005 INFORMS National Meeting, San Francisco, CA, November 2005.

B24 "Optimal Computing Budget Allocation and Efficient Design Generation for Simulation Optimization", 2005 INFORMS National Meeting, San Francisco, CA, November 2005.

B25 "Optimal Computing Budget Allocation Under Correlated Sampling," 2004 Winter Simulation Conference, Washington, DC, December 2004.

B26 "Efficient Simulation-based Stochastic Optimization," 2004 INFORMS National Meeting, Denver, CO, October 2004.

B27 "Air Transportation Network Load Balancing using Auction-based Slot Allocation for Congestion Management," NEXTOR Wye River Conference, June 2004.

B28 "Efficient Computing Budget Allocation for Stochastic Air Traffic Network Simulation," 2004 CORS/INFORMS Joint Meeting, Banff, Canada, May 2004.

B29 "Network Load Balancing to Safe Loads Using Airport Arrival Slot Auctions for Optimum Allocation," 2004 CORS/INFORMS Joint Meeting, Banff, Canada, May 2004.

B30 "An Efficient Discrete-Event-Simulation-Based Approach for Combinatorial Stochastic Decision Problems And Its Application to Semiconductor Scheduling Problems," 2004 INFORMS Conference on OR/MS Practice, Boston, MA, April 2004.

B31 "Simulation Allocation for Determining the Best Design in the Presence of Correlated Sampling," 12th INFORMS/Applied Probability Society Conference, Beijing, China June 2004.

B32 "Efficient Sampling for Simulation-based Optimization under Uncertainty," Fourth International Symposium on Uncertainty Modeling and Analysis, College Park, MD, September 2003.

B33 "Modeling the Performance of the National Airspace System," 2002 Transportation Research Board Annual Meeting, Washington, DC, January 2002.

B34 "An Asymptotic Allocation for Simultaneous Simulation Experiments," 1999 Winter Simulation Conference, Phoenix, AZ, December 1999.

B35 "Simultaneous Simulation Experiments and Nested Partition for Discrete Resource Allocation in Supply Chain Management," 1999 Winter Simulation Conference, Phoenix, AZ, December 1999.

B36 "Simulation Planning for Ordinal Comparison in Discrete Event Dynamic Systems," 1999 INFORMS National Meeting, Philadelphia, PA, November 1999.

B37 "Web-Based Simulation and Decision Support System for Bulk Mail Network Planning," 1999 INFORMS National Meeting, Philadelphia, PA, November 1999.

B38 "Selecting The Best System: Asymptotic Result for Optimal Computing Budget Allocation Algorithm," 1999 INFORMS National Meeting, Philadelphia, PA, November 1999.

B39 "Simulation and Decision Making," 1999 INFORMS National Meeting, Philadelphia, PA, November 1999.

B40 "Computing Budget Allocation for Simulation Experiments with Different System Structures," 1998 Winter Simulation Conference, Washington, DC, December 1998.

B41 "Optimizing the Design of a Plant-Level Supply Chain in the Semiconductor Industry," 1998 INFORMS National Meeting, Montreal, Canada, April 1998.

B42 "Intelligent Computing Budget Allocation for Stochastic Simulation and Optimization," 1998 INFORMS National Meeting, Montreal, Canada, April 1998.

B43 "Integer Programming using Simulation and Ordinal Optimization and Its Application to A Job Shop Scheduling Problem," 1998 INFORMS National Meeting, Montreal, Canada, April 1998.

B44 "Optimal Way to Find the Optimal Design for Discrete Event Simulation Experiments," the SPIE's 12 Annual International Symposium on Aerospace/Defense Sensing, Simulation, and Controls, Orlando FL, April 1998.

B45 "New methodologies for Discrete Event Simulation and their Applications," The 36th IEEE Conference on Decision and Control, San Diego, CA, December 1997.

B46 "On The Role of Large Deviation Principle in Ordinal Comparison for Discrete Event Dynamic Systems," The 36th IEEE Conference on Decision and Control, San Diego, CA, December 1997.

B47 "Intelligent Computing Budget Allocation for Discrete Event Simulation and Optimization," The 1997 Intelligent Systems and Semiotics Conference, Washington, DC. September 1997.

B48 "Comparison of Performance Orders of Different Designs for Discrete-Event Dynamic Systems," The 1997 Intelligent Systems and Semiotics Conference, Washington, DC. September 1997.

B49 "Optimal Computing Budget Allocation for Discrete-Event Simulation", The 9th INFORMS Applied Probability Conference, Boston, MA, June 1997.

B50 "Optimal Computing Budget Allocation for Stochastic Optimization with Applications to Manufacturing Scheduling Problems", The 9th INFORMS Applied Probability Conference, Boston, MA, June 1997.

B51 "Probabilistic Control Method for Stochastic Systems", The 9th INFORMS Applied Probability Conference, Boston, MA, June 1997.

B52 "An Application of Ordinal Optimization to A Robot Motion Planning Problem," The 33rd Annual Allerton Conference on Communication, Control, and Computing, University of Illinois at Urbana-Champaign, October 1995.

B53 "Extension of The Standard Clock Method for Discrete Event Simulation," 1994 INFORMS National Meeting, Boston, MA, 1994.

## C. Invited Presentations in US Government

C1 "Efficient Simulation-based Decision Making Under Uncertainty," National Security Agency, Washington, DC. June 2008.

C2 "Bayesian Networks and Efficient Stochastic Simulation for NAS Modeling, Data Mining, and Design," NASA Ames Research Center, CA, October 2006.

C3 "Bayesian Networks and Efficient Stochastic Simulation for NAS Modeling, Data Mining, and Design," John Volpe Center, Department of Transportation, Cambridge, MA, August 2006.

C4 "Bayesian Networks for Estimation of Delay Propagation and Cancellation in the NAS," FAA Nextor Workshop, Monterey, CA, March 2006.

C5 "Fast Simulation-based Optimization for Engineering Design Under Uncertainty," Sandia National Laboratories, Computational Sciences and Mathematics Department, Livermore, CA, June 2005.

C6 "IV&V Research for VAMS Simulation Model," NASA Ames Research Center, Moffett Field, CA, March 2005.

C7 "Very Efficient Simulation for Engineering Design Problems," Sandia National Laboratories, Engineering Science, Albuquerque, NM, January 2004.

C8 "Probabilistic Ordinal Optimization Approaches for Continuous-Variable Optimization Under Uncertainty," Sandia National Laboratories, Validation and Uncertainty Quantification (Dept. 9133), Albuquerque, NM, July 2002.

C9 "Decision Support System for Bulk Mail Network Planning," United States Postal Service, Headquarters, Washington, D.C., May 1999.

C10 "An Engineering Design Framework Integrating Robust Optimization and Structured Simulation Experiments," Sandia National Laboratories, Structural Dynamics and Vibration Control Department, Albuquerque, NM, May 1998.

C11 "Integrated Logistics Systems for Bulk Mail Network," United States Postal Service, Engineering Center, Merrifield, VA, April 1998.

## D. Contributed Presentations at Conferences

D1 “Optimal Sampling in Design of Experiment for Simulation-based Stochastic Optimization,” 2008 IEEE Conference on Automation Science and Engineering, Washington, DC, August 2008.

D2 "Airport Slot Controls Are Required to Make NGATS Modernization Work," 51st ATCA Annual Conference & Exposition, Washington, DC, October 2006.

D3 "Propagation of Delays in the National Airspace System," 22nd Conference on Uncertainty in Artificial Intelligence, Cambridge, MA, July 2006, chosen for a plenary presentation.

D4 "Estimation of Delay Propagation in the NAS Using Bayesian Networks," 2005 Air Traffic Management Seminar, Baltimore, MD, June 2005.

D5 "Seminal Concepts for a New Approach to Continuous-Variable Optimization Under Uncertainty: Probabilistic Ordinal Optimization," 10th AIAA Multidisciplinary Analysis and Optimization Conference, Albany NY, September 2004

D6 "Intelligent Simulation for Evaluating Alternatives and Application to Air Traffic Management," 2004 International Conference on Service Systems and Service Management, Beijing, China, July 2004.

D7 "Simulation Allocation for Determining the Best Design in the Presence of Correlated Sampling," 12th INFORMS Applied Probability Society Conference, Beijing, China, June 2004.

D8 "A Case Study for Optimal Dynamic Simulation Allocation in Ordinal Optimization," 2004 American Control Conference, Boston, June 2004, awarded as best presentation in the session.

D9 "Network Load Balancing to Safe Loads Using Airport Arrival Slot Auctions for Optimum Allocation," 2004 AGIFORS Airline Operations Conference, Arlington, VA, May 2004.

D10 "Using Auction-Based Slot Allocation for Traffic Demand Management at Hartsfield Atlanta International Airport: A Case Study," 2004 Transportation Research Board Annual Meeting, Washington, DC, January 2004.

D11 "Bettern-Than-Optimal Simulation Run Allocation," 2003 Winter Simulation Conference, New Orleans, December 2003.

D12 "Efficient Composition of Good Enough Dispatching Policies for Semiconductor Manufacturing," Twelfth International Symposium on Semiconductor Manufacturing, San Jose, CA, October 2003.

D13 "Space-time Correlation Analysis of Quality-of-Service at Major US Airports," 22nd Digital Avionics Systems Conference, Indianapolis, Indiana, October 2003.

D14 "Application of Probabilistic Ordinal Optimization Concepts to a Continuous-Variable Probabilistic Problem," Fourth International Symposium on Uncertainty Modeling and Analysis, College Park, MD, September 2003.

D15 "Dynamic Scheduling Rule Selection for Semiconductor Wafer Fabrication," 2003 IEEE International Conference on Robotics and Automation, Taipei, Taiwan, September 2003, received the "Kayamori Best Automation Paper Award" from the conference.

D16 "Simulation Allocation for Determining the Best Design in the Presence of Correlated Sampling," Joint Statistical Meetings, San Francisco, August 2003.

D17 "Proposal for Demand Management Using Auction-Based Arrival Slot Allocation," 5th EUROCONTROL / FAA ATM R&D Seminar, Budapest, Hungary, June 2003.

D18 "Exploratory Study of Auction-based Arrival Slot Allocation," 2003 NEXTOR - FAA - INFORMS Conferences, Washington, DC, June 2003.

D19 "Evaluation of Airspace Metrics for New ATM Concepts," 2003 NEXTOR - FAA - INFORMS Conferences, Washington, DC, June 2003.

D20 "Using Time Series to Model NAS Operational Correlations," 2003 NEXTOR - FAA - INFORMS Conferences, Washington, DC, June 2003.

D21 "Estimating Collision Probabilities of Landing Airplanes in a Small Aircraft Transportation System," 2003 Transportation Research Board Annual Meeting, Washington, DC, January 2003.

D22 "Optimal Computing Budget Allocation Methods for Simulation Measurement of Network Performance," 2003 Transportation Research Board Annual Meeting, Washington, DC, January 2003.

D23 "Design of Ordinal Optimization-based Simulation Methods for Efficient Scheduling Rule Selection for Fab Operations," Semiconductor Manufacturing Technology Workshop, Hsin-Chu, Taiwan, December 2002.

D24 "Intelligent Monte Carlo Sampling for Decision Making Under Uncertainty," 2002 IASTED International Conference on Modeling and Simulation, Marina del Rey, CA, May 2002.

D25 "Modeling the Performance of the National Airspace System," 2002 Transportation Research Board Annual Meeting, Washington, DC, January 2002.

D26 "Use of Probabilistic Ordinal Optimization for Continuous-Variable Optimization Under Uncertainty," 1st Annual McMaster Optimization Conference: Theory and Applications, Montreal, Canada, August 2001.

D27 "Dynamic Scheduling Rule Selection for Semiconductor Wafer Fabrication," 2001 IEEE International Conference on Robotics and Automation, Seoul, Korea, May 2001.

D28 "Optimal Computing Budget Allocation for Discrete Event Simulation," ctes de la 3e Conference Francophone de Modelisation et Simulation, Troyes, France, April 2001

D29 "Efficient Approach for Monte Carlo Simulation Experiments and Its Applications to Circuit Systems Design," The 34th Annual Simulation Symposium, Seattle, WA, April 2001.

D30 "Very Efficient Simulation for Engineering Design Problems," 2001 NSF Design, Service and Manufacturing Grantees and Research Conference, Tampa, FL, January 2001.

D31 "Distributed Web-Based Simulation Optimization," 2000 Winter Simulation Conference, Orlando, FL, December 2000.

D32 "Web-Based Simulation and Decision Support System for Bulk Mail (Parcel) Network Planning," the 42nd Annual Meeting of the Transportation Research Forum, Annapolis, MD, November 2000.

D33 "A Gradient-Based Method For Analyzing Stochastic Variational Inequalities With One Uncertain Parameter," 17th International Symposium on Mathematical Programming Atlanta, Georgia, August 2000.

D34 "Operating Room Utilization: Determination of Optimum Utilization," 2000 Annual Meeting of the American Society of Anesthesiologists, October 2000.

D35 "A Hybrid Approach for Integer Programming Combining Genetic Algorithms, Linear Programming and Ordinal Optimization," Latin-Ibero-American Conference on Operations Research and Systems, September 2000.

D36 "Stochastic Discrete Resource Allocation Optimization," The 38th IEEE Conference on Decision and Control, Phoenix, AZ, December 1999.

D37 "Exponential Convergence of Two-Stage Stochastic Programming," The 14th World Congress of International Federation of Automatic Control, July 1999.

D38 "An Integration of Ordinal Optimization, Evolutionary Computation & Linear Programming for Linear Mixed Integer Programming Problems," 1999 INFORMS National Meeting, Cincinnati, OH, May 1999.

D39 "On the Convergence Rate of Ordinal Optimization for A Class of Stochastic Discrete Resource Allocation," The 37th IEEE Conference on Decision and Control, December 1998.

D40 "Web-Based Simulation Experiments," The 1998 Winter Simulation Conference, December 1998.

D41 "Dispatching Rule Selection for Semiconductor Wafer Fabrication by Ordinal Optimization and Simulation," The Rensselaer's Sixth International Conference on Agile, Intelligent, and Computer Integrated Manufacturing, October 1998.

D42 "New Development of Optimal Computing Budget Allocation For Discrete Event Simulation," The 1997 Winter Simulation Conference, December 1997.

D43 "Algorithm Comparison for Manufacturing Scheduling Problems," The 36th IEEE Conference on Decision and Control, December 1997.

D44 "The Large Deviation principle and Ordinal Comparison in Discrete Event Dynamic Systems," The Second Chinese World Congress on Intelligent Control and Intelligent Automation, Si-An, China, June 1997.

D45 "A Gradient Approach of Smartly Allocating Computing Budget for Discrete Event Simulation," 1996 Winter Simulation Conference, San Diego, CA, December 1996.

D46 "The Effect of Correlation on Ordinal Comparison of Discrete Event Dynamic Systems," The 35th IEEE Conference on Decision and Control, Kobe, Japan, December 1996.

D47 "Intelligent Computing Budget Allocation for Stochastic Simulation," 1996 Artificial Neural Networks in Engineering Conference, St. Louis, Missouri, November 1996.

D48 "An Effective Approach of the Standard Clock Method for General Discrete Event Simulation," 1996 INFORMS National Meeting, Washington, DC, May 1996.

D49 "Motion Planning of Walking Robots in Environments with Uncertainty," 1996 IEEE International Conference on Robotics and Automation, Minneapolis, Minnesota, April 1996.

D50 "An Effective Approach to Smartly Allocate Computing Budget for Discrete Event Simulation," The 34th IEEE Conference on Decision and Control, New Orleans, Louisiana, December 1995.

D51 "A Hybrid Approach of the Standard Clock Method and Event Scheduling Approach for General Discrete Event Simulation," 1995 Winter Simulation Conference, Arlington, VA, December 1995.

D52 "Smart Computing Budget Allocation for Discrete Event Simulation," 1995 INFORMS National Meeting, Los Angeles, CA, April 1995.

D53 "Parallel Simulation of Discrete Event Dynamic Systems," Optimization Days 1993, Montreal, Canada, May 1993.

# Professional Society Service

## Editorial Boards

- Guest Editor, special issues on simulation optimization and its applications, IIE Transactions, 2011.
- Departmental Editor, IIE Transactions, 2008-Present.
- Associate Editor, IEEE Transactions on Automatic Control, 2007-Present.
- Area Editor, Journal of Simulation Modeling Practice and Theory (International Journal of the Federation of European Simulation Societies -- EUROSIM), 2008-Present.
- Associate Editor, Book Series on System Engineering and Operations Research, World Scientific Publishing Co., 2007-Present.
- Editorial Board Member, International Journal of Simulation and Process Modeling, 2004-Present.
- Editorial Board Member, Open Automation and Control Systems Journal, 2007-2010.
- Associate Editor of the IEEE Control Systems Society (responsible for American Control Conference, IEEE Conference of Decision and Control, and Conference on Control Applications), 2000-2007.
- Co-Editor, a special issue of Optimization and Engineering Journal on Optimization Under Uncertainty, 2004.
- Co-Editor, 2002 Winter Simulation Conference, San Diego, CA, 2002.

## Major Organizer of Conferences

- Chair of Contributed Sessions Committee, 2008 Informs Annual Meeting, Washington, DC, 2008 (more than 4000 papers presented).
- Program Co-Chair, 2007 Informs Simulation Society Workshop.

## Member of Conference Program Committees

- 1st International Conference on Simulation and Modeling Methodologies, Technologies and Applications, Noordwijkerhout, Netherlands, 2011.
- 2011 International Conference on Computer Control and Automation, South Korea, 2011.
- 20th IASTED International Conference on Modeling and Simulation, Banff, Alberta, Canada, 2009.
- 2009 International Conference on Modeling, Simulation, and Identification, Beijing, China, 2009.
- 19th IASTED International Conference on Modeling and Simulation, Quebec City, Canada, 2008.

- 18th IASTED International Conference on Modeling and Simulation, Montreal, Canada, 2007.
- 2007 IASTED Asian Conference on Modeling and Simulation, Beijing, China, 2007.
- 2006 IASTED Intl. Conf. on Modeling and Simulation, Montreal, Canada, 2006.
- 2005 IASTED Intl. Conf. on Modeling and Simulation, Cancun, Mexico, 2005.
- 2004 IASTED Intl. Conf. on Modeling and Simulation, Marina del Rey, CA, 2004.
- 2003 IASTED Intl. Conf. on Modeling and Simulation, Palm Springs, CA, 2003.
- 2002 IASTED Intl. Conf. on Modeling and Simulation, Marina del Rey, CA, 2002.
- 2001 IASTED Intl. Conf. on Modeling and Simulation, Pittsburgh, PA, 2001.
- 2000 IASTED International Conference on Modeling and Simulation, Pittsburgh, PA, 2000.
- 38th IEEE Conference on Decision and Control, Phoenix, AZ, 1999.
- 13th European Simulation Multiconference, Warsaw, Poland, 1999.
- 1999 IASTED Intl. Conf. on Modeling and Simulation, Philadelphia, PA, 1999.
- 4th International Conference of Information Systems Analysis and Synthesis, Orlando, FL, 1998.
- 3rd International Congress of the Federation of European Simulation Societies, Helsinki, Finland, 1998.
- 3rd International Conference On Systems Science and Systems Engineering, Beijing, China, 1998.
- 1998 International Conference On Web-Based Modeling & Simulation, San Diego, CA, 1998.

## Other Professional and Organizational Activities

- Track Chair, 2012 IEEE Conference on Automation Science and Engineering.
- Keynote Lecturer. "Simulation Optimization," 2010 Summer Workshop on Operations Research. Taipei, July 2010.
- Chair, IIE Transaction Best Paper Award Committee, 2009.
- Technical Advisory Committee, 2007 International Conference on Modeling and Simulation -- Emerging Methods Towards Frontier Technologies, Coimbatore, India, 2007.
- Keynote Speaker. "Efficient Simulation for Decision Making under Uncertainly," 2007 International Conference on Modeling and Simulation, Coimbatore, India, 2007.
- Treasurer, INFORMS Simulation Society, 2004-2006.
- Council Member, INFORMS Simulation Society Council, 2004-2006.
- Track Coordinator (for Analysis Methodology Track), The 2004 Winter Simulation Conference, Washington, DC, 2004. The responsibility is to handle review for

contributed papers and organize sessions for invited papers. 27 papers accepted for presentation.

- Track Coordinator (for Analysis Methodology Track), The 2003 Winter Simulation Conference, New Orleans, LA, 2003. The responsibility is to handle review for contributed papers and organize sessions for invited papers.
- Local Arrangements Committee, 1999 INFORMS National Meeting, Philadelphia, PA, 1999.
- Chairman, Simulation Cluster, 1999 INFORMS National Meeting, Philadelphia, PA, 1999.
- Advisor, INFORMS (Institute for Operations Research and Management Science) Student Chapter at the University of Pennsylvania, 1995-2000.

### Professional Affiliations

- Senior Member, Institute of Electrical and Electronics Engineering (IEEE)
- Member, Institute for Operations Research and Management Science (INFORMS)

# University Service

### College/School Service

- IT&E School Research Council, 2006-Present
- IT&E School Graduate Committee, 2006- Present
- Secretary of Faculty of IT&E School, 2002-2005
- IT&E School Outstanding Teaching Award Committee, 2001-02
- Ralph E. Powe Award Committee, 2001
- Graduate Affairs Committee, 1999-2000
- Harold Pender Award Committee, 1999
- Academic Performance Committee, 1997-1998
- Library Committee, 1996-1997, 1998-2000

### Department Service

- Chair, Faculty Search Committee, 2010-Present
- Chair, Graduate Curriculum Committee, 2006- Present
- Coordinator, SEOR Graduate Program, 2006- Present
- Chair, Undergraduate Curriculum Committee, 2002-2005
- Chair, Modeling Methodologies Committee, 2002
- Miller and Harris Scholarship Committee, 2001
- Graduate Curriculum Committee, 2000-2002

- Alumni/Student Relations Committee, 2000-2002
- Acting Chairman, Systems Engineering Graduate Group, 1999-2000
- Chairman, Visiting Faculty Recruiting Committee, 1998-1999 (hired two visiting professors)
- Chairman, Faculty Recruiting Committee, 1997-1998 (hired one Full Professor and one Assistant Professor)
- Member, Faculty Recruiting Committee, 1996-1997 (hired one Assistant Professor), 1998-1999 (hired one Assistant Professor)
- Chairman, Graduate Recruiting Committee, 1996-1998
- Member, Qualifying Examination Committee, 1996-2000
- Coordinator, Systems Engineering Department Seminar Series, 1995-2000
- Member, Computing Committee, 1994-2000

# Teaching / Supervision

## Post Doctoral Fellow Supervised

- R. K. Jana (Ph.D. from India Institute of Technology, also hired as Research Assistant Professor at GMU), 2006-07, currently with Indian Institute of Social Welfare & Business Management.
- Liya Wang (Ph.D. from Penn State University, also hired as Research Assistant Professor at GMU), 2006-08, currently with NASA Ames Research Center.

## Ph.D. Student Supervision

**As Dissertation Advisor**

1. Mark Brantly, "Simulation-based Stochastic Optimization on Discrete Domains: Integrating Optimal Computing and Response Surfaces," May 2011. He is currently with Goose Point Analysis.
2. Donghai He, "Efficient Computing Budget Allocation for Stochastic Simulation Optimization," May 2008. He is currently with CSSI, Inc.
3. Loan Le, "Demand Management at Congested Airports: How Far Are We from Utopia?", August 2006 (co-supervised with G. Donohue). She is currently with American Airlines.
4. Jianwu Lin, "A Research on Simulation Budget Allocation and Its Application for Optimizing the Reliability of Transportation System Capacity", November 2003. He is currently with Goldman Sachs, New York, NY.
5. Yuh-Chyun Luo, "Motion Planning of Walking Robots in Environments with Uncertainty." November 1999. He is currently an Associate Professor at Chung-Cheng Institute of Technology, Taiwan.

6. Hsioa-Chang Chen, "Optimal Computing Budget Allocation in Selecting the Best System Design via Discrete Event Simulation." August 1998. He is currently with IBM.
7. Ben Crain, “Rare-event Simulation and Decision Making,” in progress.

**As Member of Other Ph.D. Dissertation Committees**

1. Mark Pflanz, “The Evaluation of Operational and Systems Architectures in a Net-Centric Perspective,” SEOR Dept, GMU, in progress.
2. Wee Wee Sim, “Ontology-Based User Requirements Modeling,” SEOR Dept, GMU, in progress.
3. Guodong Shao, “Verification and Validation for Simulation Modeling,” Department of Information and Software Engineering, GMU, in progress.
4. Donald E Jarvis, “System Identification and Control”, Electrical and Computer Department, GMU, in progress.
5. Yun-Sheng Wang, " Unsupervised Change Detection on Data Stream Using Infinite Gaussian Mixture Models," Information Technology doctoral program, GMU, in progress.
6. Kenneth Corner, "An Analysis of the Impact of Different Activation Schemes in Agent-Based Models," SEOR Dept, GMU, in progress.
7. Tammy L. Tippie, "Output Analysis for Perception-Based Combat Simulations," SEOR Dept, GMU, in progress.
8. Aaron Newman, "Confidence, Pedigree, and Security Classification for Improved Data Fusion," SEOR Dept, GMU,2009.
9. Poornima Balakrishna, "A Reinforcement Learning Approach to Prediction of Taxi-Out Time of Departing Aircrafts at an Airport," SEOR Dept, GMU, 2009.
10. Malak Al-Nory, "Service Composition Language to Unify Simulation and Optimization of Supply Chains," Department of Information and Software Engineering, GMU, 2009.
11. Berrin Aytac, "Supply-Demand Planning in the Contract Manufacturing Environments," Department of Industrial and Systems Engineering, Lehigh University, 2009.
12. Ning Xu, "Method for Deriving Multi-Factor Models for Predicting Airport Delays", SEOR Dept, GMU, 2007.
13. Yue Xie, "Stochastic Simulation Models for Safety Analysis of Air Transportation Sysems," SEOR Dept, GMU, 2005.
14. Xioamin Lu, "Modeling and Performance Evaluation of Broadband Switch Architectures," Department of Electrical and Computer Engineering, GMU, 2002.
15. Kadir Ertogral, "Coordinating Supply Chain in Decentralized Environments: Optimization, Auction, and Bargaining-Theoretic Models," Dept. of Industrial & Mfg. Systems Engineering, Lehigh University, 2001.

16. Margaret H. Belknap, "A Gradient-Based Methodology for the Analysis of Stochastic Variational Inequalities," Dept. of Systems Engineering, University of Pennsylvania, 2000.
17. Shih-Jen Liao (U of Penn, SE Dept.), 1999.
18. William Liang (U of Penn, SE Dept.), 1998.
19. Shiyong Dong (U of Penn, SE Dept.), 1997.
20. Jaffar Rehman (U of Penn, CIS Dept.), 1996.
21. Nikola Krstanoski (U of Penn, SE Dept.), 1995.

## M.S. Thesis Supervision

**As the Thesis Supervisor**

1. Ling-Cheng Chang (Institute of Industrial Engineering, National Taiwan University, Taiwan, co-supervised with Prof. Argon Chen at National Taiwan University), "Model-based Computing Budget Allocation for G/G Queue System Simulations," July 2008.

**As Member of Other M.S. Thesis Committees**

1. Christopher A. Paganoni, "Evaluating the Impact of Up-Stream Hydrologic Events and Local Environmental Conditions on Farfantepenaeus duorarum in Johnson Key Basin using Hybrid Neural Networks," SEOR Department, 2006.
2. Todd Martin, "Distributed Data Fusion in Mobile Ad Hoc Networks," SEOR Department, 2005.
3. Victoria A. Washington, "Optimizing Your 401(K) Plan Using Influence Diagrams," SEOR Department, 2003.
4. Brian Saulson, "Application of Recent Advances in Nonlinear State Estimation to Multi-Modal Ballistic Missile Tracking," SEOR Department, 2002

## Awards for Supervising Undergraduate Senior Design Projects

- 1999 The Outstanding Systems Engineering Senior Design Project, by the team of Omar Nazif & Sy Damle.
- 1998 The Best Systems Engineering Senior Design Project; and Honorable Mention, SEAS Competition of Senior Design Projects, by the team of Neel Mehta & Kelash Kumar.
- 1997 The Outstanding Systems Engineering Senior Design Project, by the team of Rajiv Mehta & Abhijeet Joshi.

## Student Evaluation for Teaching at George Mason University (2000-Present)

| Semester Year | Courses/Titles | Students Enrolled | Rating of Instructor (max 5.0)+ | Rating of Course (max 5.0)+ |
|---|---|---|---|---|
| Spring 2011 | OR 735 / SYST 735 Advanced Stochastic Simulation | 8 | 5.00 | 5.00 |
| Spring 2011 | OR335/SYST335 Discrete Systems Simulation Modeling* | 33 | 4.93 | 4.76 |
| Fall 2010 | MATH442/OR442 Stochastic Operation Research* | 19 | 5.00 | 4.87 |
| Fall 2010 | OR635 Discrete System Simulation* | 25 | 4.65 | 4.57 |
| Spring 2010 | OR335/SYST335 Discrete Systems Simulation Modeling* | 22 | 4.89 | 4.84 |
| Spring 2010 | MATH442/OR442 Stochastic Operation Research* | 11 | 4.90 | 5.00 |
| Fall 2009 | OR635 Discrete System Simulation* | 31 | 4.70 | 4.50 |
| Fall 2009 | OR645/STAT 645 Stochastic Processes | 21 | 4.40 | 4.20 |
| Spring 2009 | IT 735/OR 735 Advanced Stochastic Simulation | 6 | 4.75 | 5.00 |
| Spring 2009 | OR335/SYST335 Discrete Systems Simulation Modeling* | 19 | 5.00 | 4.76 |
| Fall 2008 | MATH442/OR442 Stochastic Operation Research* | 17 | 5.00 | 4.85 |
| Fall 2008 | OR635 Discrete System Simulation* | 23 | 4.83 | 4.61 |
| Spring 2008 | OR335/SYST335 Discrete Systems Simulation Modeling* | 43 | 4.84 | 4.61 |
| Spring 2008 | OR 647 Queueing Theory | 12 | 4.90 | 4.40 |
| Fall 2007 | MATH442/OR442 Stochastic Operation Research* | 16 | 4.67 | 4.40 |
| Fall 2007 | OR635 Discrete System Simulation* | 19 | 4.93 | 4.67 |

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|---|---|---|---|---|
| Spring 2007 | IT 735/OR 735 Advanced Stochastic Simulation | 11 | 4.91 | 4.73 |
| Spring 2007 | OR335/SYST335 Discrete Systems Simulation Modeling* | 25 | 4.38 | 4.30 |
| Fall 2006 | OR635 Discrete System Simulation* | 20 | 4.68 | 4.35 |
| Fall 2005 | OR635 Discrete System Simulation* | 12 | 4.56 | 4.56 |
| Spring 2005 | OR335/SYST335 Discrete Systems Simulation Modeling* | 31 | 4.61 | 4.39 |
| Fall 2004 | OR635 Discrete System Simulation* | 28 | 4.73 | 4.62 |
| Spring 2004 | IT 879 Stochastic Simulation | 13 | 4.36 | 4.50 |
| Spring 2004 | OR335/SYST335 Discrete Systems Simulation Modeling* | 21 | 4.68 | 4.39 |
| Fall 2003 | OR635 Discrete System Simulation* | 23 | 4.76 | 4.62 |
| Spring 2003 | OR335/SYST335 Discrete Systems Simulation Modeling* | 26 | 4.88 | 4.82 |
| Fall 2002 | OR635 Discrete System Simulation* | 22 | 4.71 | 4.67 |
| Spring 2002 | OR335/SYST335 Discrete Systems Simulation Modeling* | 33 | 4.39 | 4.26 |
| Fall 2001 | OR635 Discrete System Simulation* | 23 | 4.78 | 4.53 |
| Fall 2001 | OR442/542 Stochastic Operations Research* | 23 | 4.77 | 4.55 |
| Spring 2001 | OR435 Discrete Systems Simulation Modeling* | 30 | 4.70 | 4.50 |
| Fall 2000 | OR635 Discrete System Simulation | 13 | 5.00 | 4.85 |

* The courses with this mark are core courses; all students in the programs are required to take them.

+ Evaluation: Excellent = 5.0
Good = 4.0
Satisfactory = 3.0
Marginal =2.0
Poor = 1.0

## Student Evaluation for Teaching at University of Pennsylvania (1994-2000)

| Semester Year | Courses/Titles | Students Enrolled | Instructor's Evaluation (max 4.0)+ | Course Evaluation (max 4.0)+ |
|---|---|---|---|---|
| Spring 1999 | SYS 603 Simulation Modeling and Analysis* | 17 | 3.7 | 3.5 |
| Fall 1998 | SYS 303 Stochastic Systems Analysis & Simulation* | 65 | 3.2 | 2.9 |
| Spring 1998 | SYS 603 Simulation Modeling and Analysis* | 27 | 3.5 | 3.3 |
| Fall 1997 | SYS 303 Stochastic Systems Analysis & Simulation* | 54 | 3.2 | 2.6 |
| Spring 1997 | SYS 603 Simulation Modeling and Analysis* | 45 | 3.3 | 3.1 |
| Fall 1996 | SYS 303 Stochastic Systems Analysis & Simulation* | 48 | 3.2 | 2.9 |
| Spring 1996 | SYS 603 Simulation Modeling and Analysis* | 41 | 3.0 | 2.7 |
| Fall 1995 | SYS 303 Stochastic Systems Analysis & Simulation* | 24 | 2.9 | 2.9 |
| Spring 1995 | SYS 321 Modeling, Simulation & Analysis | 23 | 3.1 | 2.8 |
| Fall 1994 | SYS 603 Modeling, Simulation & Analysis | 7 | 3.3 | 3.6 |

* The courses with this mark are core courses; all students in the programs are required to take them.

+ Evaluation: Excellent = 4.0
Very Good = 3.0
Good = 2.0
Fair =1.0
Poor = 0.0