

We base our research and technologies on the publications as listed below. While we do not claim ownership of the intellectual property for all of them, there are a few articles that were published through Dunip Tech LLC. All the collaborators and publishing societies retain their respective copyrights.

Books

- Zhang, L., Zeigler, B.P., **Mittal, S.**, (Eds.), **Model Engineering**, Special issue in International Journal of Modeling, Simulation and Scientific Computing, Word Scientific, [CALL FOR PAPERS](#), expected publication Fall 2015

- Zander, J., **Mittal, S.**, [Proceedings of the Summer Simulation Multi-Conference 2014](#), SCS

- **Mittal, S.**, Martin, J.L.R., [Net-centric System of Systems Engineering with DEVS Unified Process: A Book in System of Systems Engineering Series by Mo Jamshidi](#), CRC Press, Francis and Taylor Group, Feb 2013. Buy at [Amazon](#) and [CRC Press](#)

Reviews

- [Book Review in SCS Newsletter \(2013\)](#) for [Guide to Modeling and Simulation of System of Systems \(Simulation Foundations, Methods and Applications\)](#) by Bernard P. Zeigler, Hessam S. Sarjoughian, Raphel Duboz, Jean-Christophe Soulie, Springer 2012, 393 pages

Invited Talks

- **Mittal, S.**, [Attention-Focusing in Activity-based Intelligent Systems](#), Workshop on [Activity-based Modeling and Simulation \(ACTIMS'14\)](#), Jan 16-18, Zurich, Switzerland

- **Mittal, S.**, [Net-centric Cognitive Architecture using DEVS Unified Process](#), [Researching and Developing Persistent and Generative Cognitive Models Workshop](#) sponsored by US Air Force Research Lab 711th Human Performance Wing and European Office of Aerospace Research and Development, Nov. 9-11, 2010, Scottsdale, AZ

Presentations

- **Mittal, S.**, (2015). [Complex Adaptive Systems Modeling](#) , adapted from a seminar given at MIT Lincoln Lab, Massachusetts, MA
- Tolk, A., **Mittal, S.**, (2014). [A Necessary Paradigm Change to Enable Composable Cloud-based M&S Services](#) , Winter Simulation Conference, Savannah, GA
- Zeigler, B.P.,(2013). [Grand Challenges in Modeling and Simulation, What can DEVS Theory Do To Meet Them? Parts 1 and 2](#) , Seminar to School of Automation Science and Electrical Engineering, [Beihang University](#) , Beijing, China, Dec.11, 2013
- **Mittal, S., Martin, J.L.R.**, (2013) [Model Driven Systems Engineering for Netcentric System of Systems Engineering with DEVS Unified Process](#) , Winter Simulation Conference, Dec 8-11, Washington, DC

Whitepapers

- Hammonds, P., **Mittal, S.**, Zeigler, B.P., (2007) [Automated Attention Agent Assessment of Current States and Prediction of Future States using DEVS Cognitive Agent](#)

Chapters

- **Mittal, S.**, Doyle, M.J., Portrey, A.M., (2014) **Human-in-the-loop modeling in System of Systems M&S: Applications to Live, Virtual and Constructive (LVC) Distributed Mission Operations (DMO)** , In [Handbook on M&S Support for System of Systems Engineering](#) , Ed. Tolk, A., Rainey, L., John Wiley & Sons (in press)
- Douglass, S.A., **Mittal, S.** (2012), **A framework for modeling and simulation of the artificial** , In [Ontology, Epistemology, and Teleology of Modeling and Simulation](#) , Ed. A. Tolk, Springer-Verlag, Berlin
- **Mittal, S.** (2011), **Agile net-centric systems with DEVS unified process**, In [Intelligent e-based Systems Engineering](#) , Ed. Tolk, A., and Jain, L., Springer-Verlag Berlin
- Wainer, G., Zoubi, K., Dalle, O., Hill, D., **Mittal, S., Martin, J.L.R.**, Sarjoughian, H., Touraille, L., Traore, M., Zeigler, B.P. (2010),

Standardizing DEVS simulation middleware,

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[Discrete Event Modeling and Simulation: Theory and Applications](#)

, Ed. Wainer, G., Mosterman, P., CRC Press

- Wainer, G., Zoubi, K., Dalle, O., Hill, D., **Mittal, S., Martin, J.L.R.**, Sarjoughian, H., Touraille, L., Traore, M., Zeigler, B.P. (2010),

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[Discrete Event Modeling and Simulation: Theory and Applications](#)

, Ed. Wainer, G., Mosterman, P., CRC Press

- Wainer, G., Zoubi, K., **Mittal, S., Martin, J.L.R.**, Sarjoughian, Zeigler, B.P (2010), **An introduction to DEVS Standardization**

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[Discrete Event Modeling and Simulation: Theory and Applications](#)

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- Wainer, G., Zoubi, K., Dalle, O., Hill, D., **Mittal, S., Martin, J.L.R.**, Sarjoughian, H., Touraille, L., Traore, M., Zeigler, B.P. (2010),

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[Discrete Event Modeling and Simulation: Theory and Applications](#)

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- **Mittal, S.**, Zeigler, B.P., **Martin, J.L.R.**, Sahin, F., Jamshidi, M. (2008), **Modeling and simulation for systems of systems engineering**

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[System of Systems Engineering for 21st Century](#)

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Journals

- J.39. Josefa Díaz Álvarez, **José L. Risco-Martín** and J. Manuel Colmenar (2016). **Multi-objective optimization of energy consumption and execution time in a single level cache memory for embedded systems**

. The Journal of Systems and Software. Vol. 111, pp. 200-212. [

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- J.38. J. Ignacio Hidalgo, Ricardo Fernández, J. Manuel Colmenar, Florencia Cioffi, **José**

L. Risco-Martín

and Gaspar González-Doncel (2016).

Using evolutionary algorithms to determine the residual stress profile across welds of age-hardenable aluminum alloys

. Applied Soft Computing. Vol. 40, pp. 429-438. [
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- J.37. Josué Pagán, **José L. Risco-Martín**, José M. Moya and José L. Ayala (2016). **Modeling methodology for the accurate and prompt prediction of symptomatic events in chronic diseases**

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- J.36. Marina Zapater, **José L. Risco-Martín**, Patricia Arroba, José L. Ayala, José M. Moya and Román Hermida (2016). **Runtime data center temperature prediction using Grammatical Evolution techniques**

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- J.35. Alfredo Cuesta-Infante, J. Manuel Colmenar, Zorana Bankovic, **José L. Risco-Martín**

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Comparative study of meta-heuristic 3D floorplanning algorithms

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- J.34. David Cuesta, **José L. Risco-Martín**, José L. Ayala and J. Ignacio Hidalgo (2015). **Thermal-Aware Floorplanner for 3D IC, including TSVs, Liquid Microchannels and Thermal Domains Optimization**

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- J.33. Josefa Díaz Álvarez, J. Manuel Colmenar, **José L. Risco-Martín**, Juan Lanchares

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Optimizing L1 cache for embedded systems through grammatical evolution

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- J.32. Josué Pagán, M. Irene De Orbe, Ana Gago, Mónica Sobrado, **José L. Risco-Martín**, J. Vivancos Mora, José M. Moya and José L. Ayala (2015).

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- J.31. Patricia Arroba, **José L. Risco-Martín**, Marina Zapater, José M. Moya and José L. Ayala (2014).

Enhancing Regression Models for Complex Systems Using Evolutionary Techniques for Feature Engineering

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- J.30. Hidalgo, J.I., Maqueda, E., **Martín, J.L.R.**, Infante, A.C., Colmenar, J.M., & Nobel, J. (2014).

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- J.29. **Martín, J.L.R.**, Colmenar, J.M., Hidalgo, J.I., Lanchares, J., & Josefa Díaz. (2014).

[A methodology to automatically optimize dynamic memory managers applying grammatical evolution](#)

. Journal of Systems and Software. doi:<http://dx.doi.org/10.1016/j.jss.2013.12.044>

- J.28. **Mittal, S.**, Zeigler, B.P., **[Context and Attention in Activity-based Intelligent Systems](#)**, Proceedings of ACTIMS'14, ITM Web of

Conferences, Vol. 3.

DOI: <http://dx.doi.org/10.1016/j.itmconf/20140303001>

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- J.27. Élez, M.S., Pardines, I., García, P., Miñana, G., Román, S. Sánchez, M., & **Martín,**

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- J.26. Lanchares, J., Garnica, O., **Martín, J.L.R.**, Hidalgo, J.I., & Regadío, A.. (2013). [Real-time evolvable pulse shaper for radiation measurements](#)
Nuclear Instruments and Methods in Physics Research A, 727, 73–83.
 - J.25. Portas, E.B., Torre, L., Moreno, A., **Martín, J.L.R.**, (2013) [On the performance comparison of multi-objective evolutionary UAV path planners](#), Information Sciences, Available online 26 February 2013, ISSN 0020-0255, [10.1016/j.ins.2013.02.022](#)
 - J.24. Cuesta, D., **Martín, J.L.R.**, Ayala, J.L., & Hidalgo, J.I. (2013). [3D thermal-aware floorplanner using a MOEA approximation](#)
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 - J.23. **Mittal, S.** (2013), [Emergence in Stigmergic and Complex Adaptive Systems: A Formal Discrete Event Systems Perspective](#), Cognitive Systems Research, Ed(s). M.J. Doyle and L. Marsh, Special Issue: Stigmergy in Human Domain, 21, 22-39
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 - J.22. Zapater, M., Sánchez, C., Ayala, J.L., Moya, J.M., & **Martín, J.L.R.** (2012). [Ubiquitous Green Computing Techniques for High Demand Applications in Smart Environments](#)
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- J.16. **Martín, J.L.R.**, Atienza, D., Colmenar, J.M., & Garnica, O. (2010). [A parallel evolutionary algorithm to optimize dynamic memory managers in embedded systems](#)
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- J.15. Mak, E., **Mittal, S.**, Hwang, M.H., Nutaro, J. (2010), [Automated Link-16 testing using the discrete event system specification and extensible markup language](#)
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- J.13. **Martin, J.L.R.**, **Mendel, J.**, **Mittal, S.**, Zeigler, B.P. (2009), [eUDEVS: Executable UML using DEVS theory of modeling and simulation](#)
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- J.11. Boloukas, C., **Martín, J.L.R.**, Atienza, D., Poucet, C., Papadopoulos, L., Mamagkakis, S., & Lanchares, J. (2009). [Optimization methodology of dynamic data structures based on genetic algorithms for multimedia embedded systems](#)
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- J.6. **Martín, J.L.R.**, Orozco, J.A.L., Cruz, J.M., & Toro, B.A.. (2006). [Distribución óptima de GLP en poliductos](#). Ingeniería Química, 442, 118–125.
- J.5. Hu, X., Zeigler, B.P., **Mittal, S.** (2005), [Variable structure in DEVS component-based modeling and simulation](#), Transactions of SCS, 81(2), 91-102 (Top 20 most cited in SIMULATION)
- J.4. Cruz, J. M., Herrán, A., **Martín, J.L.R.**, & Toro, B.A.. (2005). [Hybrid heuristic and mathematical programming in oil pipelines networks: Use of immigrants](#). Journal of Zhejiang University SCIENCE, 6(1), 9–19. doi:10.1631/jzus.2005.A0009
- J.3. **Martín, J.L.R.**, Cruz, J.M., Toro, B.A., & Herrán, A.. (2005). **Entorno gráfico de modelado para problemas de optimización de sistemas a gran escala**. RIAI: Revista Iberoamericana de Automática E Informática Industrial, 2(4), 89–100.
- J.2. **Martín, J.L.R.**, Herrán, A., Cruz, J.M., & Toro, B.A.. (2005). **Estrategias de funcionamiento de una red de distribución de gas**. Optimización multiobjetivo. Ingeniería Química, 421, 79–86.
- J.1. Orozco, J.A.L., **Martín, J.L.R.**, Cruz, J.M., & Toro, B.A.. (2004). **Sistema gráfico para logística y optimización. Alimentación**, Equipos Y Tecnología, 23, 61–67.

Conferences

- C.34. Samira Briongos, Pedro Malagón, **José L. Risco-Martín** and José M. Moya (2016). **Modeling Side-Channel Cache Attacks on AES**. In Proceedings of the 2016 Summer Simulation Multiconference (SummerSim'16). [[PDF](#)]
- C.33. J. Manuel Colmenar, J. Ignacio Hidalgo, Juan Lanchares, Oscar Garnica, **José L. Risco-Martín**, Iván Contreras, Almudena Sánchez and J. Manuel Velasco (2016). **Compilable Phenotypes: Speeding-Up the Evaluation of Glucose Models in Grammatical**

Evolution

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- C.32. Ranjita Kumari Dash, **José L. Risco-Martín** and Ashok Kumar Turuk (2016). **Bio-Inspired Thermal Management Techniques for Three Dimensional Heterogeneous Stacked Network-on-Chip Systems**

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- C.30. **Saurabh Mittal** and **José L. Risco-Martín** (2016). **DEVSML Studio: A Framework for Integrating Domain-Specific Languages for Discrete and Continuous Hybrid Systems into DEVS-Based M&S Environment**

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- C.28. **José L. Risco-Martín**, **Saurabh Mittal**, Juan Carlos Fabero, Pedro Malagón and José L. Ayala (2016). **Real-time**

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- C.27. Juan Carlos Salinas-Hilburg, Marina Zapater, **José L. Risco-Martín**, Jose Manuel Moya and Jose L. Ayala (2016).

Unsupervised Power Modeling of Co-Allocated Workloads for Energy Efficiency in Data Centers

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- C.26. Josefa Díaz Álvarez, J. Manuel Colmenar, **José L. Risco-Martín** and Juan Lanchares (2015).

Optimización Multi-objetivo del Consumo de Energía y Tiempo de Ejecución en una Memoria Cache de primer nivel para Sistemas Empotrados

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- C.25. ABSys, IM2, Esther Maqueda, Marta Botella and José Antonio Rubio (2015). **Ajuste Probabilístico de Modelos de Glucosa obtenidos mediante Gramáticas Evolutivas**

Ajuste Probabilístico de Modelos de Glucosa obtenidos mediante Gramáticas Evolutivas

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- Juan Carlos Salinas, Marina Zapater, **José L. Risco-Martín**, José Manuel Moya and José L Ayala (2015).

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- C.24. Patricia Arroba, **José L. Risco-Martín**, Marina Zapater, José M. Moya, José L. Ayala and Katzalin Olcoz (2014).

Evolutionary Power Modeling for High-end Servers in Cloud Data Centers

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- C.23. Patricia Arroba, **José L. Risco-Martín**, Marina Zapater, José M. Moya, José L. Ayala and Katzalin Olcoz (2014).

Server Power Modeling for Run-time Energy Optimization of Cloud Computing Facilities

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- C.22. Tolk, A., **Mittal, S.**, (2014). [A Necessary Paradigm Change to Enable Composable Cloud-based M&S Services](#)

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- C.21. **Mittal, S.**, (2014) [Model Engineering in Cyber Complex Adaptive Systems](#) , Workshop on Model Engineering, European Modeling and Simulation Symposium, EMSS'14, Bordeaux, France

- C.20. **Mittal, S.**, Zeigler, B.P., (2014) [Modeling Attention-Switching in Resource-Constrained Complex Intelligent Dynamical Systems \(RCIDS\)](#) , Symposium on Theory of Modeling and Simulation/DEVS, Spring Simulation Multi-Conference, Tampa, FL

- C.19. **Mittal, S.**, Martin, J.L.R., (2013) [Model-driven Systems Engineering in a](#)

Netcentric Environment with DEVS Unified Process

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- C.18. **Mittal, S.**, Doyle, M.J., Watz, E., (2013) **Detecting Intelligent Behavior with Environment Abstraction in Complex Air Combat Systems**, IEEE Systems Conference, Orlando, FL
- C.17. **Mittal, S.**, Douglass, S.A., (2012) **DEVSMML 2.0: The Language and the Stack**, Symposium on Theory of Modeling and Simulation, Spring Simulation Multiconference, Orlando, FL
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- C.13. Murano, A., **Martin, J.L.R.**, Besada-Portas, E., **Mittal, S.**, Aranda, J., (2009) **DEVS /SOA: Towards DEVS Interoperability in Distributed M&S**, IEEE/ACM International Symposium on Distributed and Real-time Applications
- C.12: **Mittal, S.**, **Martin, J.L.R.**, Zeigler, B.P., (2008) **WSDL-Based DEVS Agent for Net-Centric Systems Engineering**, International Workshop on Modeling and Applied Simulation, Italy
- C.11: Martin, J.L.R., Mittal, S., Atienza, D., Hidalgo, J.I., Lanchares, J., (2008) **Optimization of Dynamic Data Types in Embedded Systems using DEVS/SOA-based Modeling and Simulation**, 3rd International ICST Conference on Scalable Information Systems, Italy
- C.10: **Mittal, S.**, Zeigler, B.P., (2008) **DEVS Unified Process for Web-Centric Development and Testing of System of Systems**, Critical Issues in C4I, AFCEA-George Mason University Symposium
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- C.8: **Martin, J.L.R.**, Mittal, S., Zeigler, B.P., Cruz, J.M., (2007) [From UML Statecharts to DEVS State Machines using XML](#), Multi-paradigm Modeling, IEEE/ACM International Conference on Model-Driven Engineering Languages and Systems, Nashville, TN, **among Best papers**
invited to Transactions of SCS
- C.7: **Mittal, S., Martin, J.L.R.**, Zeigler, B.P., (2007) [DEVS-Based Web Services for Net-centric T&E](#), Summer Computer Simulation Conference, San Diego, CA
- C.6: **Mittal, S., Martin, J.L.R.**, Zeigler, B.P., (2007) [DEVSML: Automating DEVS Execution over SOA Towards Transparent Simulators](#), Special Session on DEVS Collaborative Execution and Systems Modeling over SOA, DEVS Integrative M&S Symposium DEVS' 07, Spring Simulation Multi-Conference
- C.5: **Martin, J.L.R., Mittal, S.**, Lopez-Pena, M.A., Cruz, J.M., (2007) [A W3C XML Schema for DEVS Scenarios](#), DEVS Integrative M&S Symposium DEVS'07, Spring Simulation Multi-Conference
- C.4: **Mittal, S.**, Mitra, A., Gupta, A., Zeigler, B.P., (2006) [Strengthening OV-6a Semantics with Rule-Based Meta-models in DEVS/DoDAF Based Life-cycle Architecture Development](#), IEEE-Information Reuse and Integration (IRI06) Conference, Special section on DoDAF, Hawaii
- C.3: Zeigler, B.P., **Mittal, S.**, (2005) [Enhancing DoDAF with a DEVS-based System Lifecycle Development Process](#), In Proceedings of IEEE International Conference on Systems, Man and Cybernetics, SMC05, Hawaii
- C.2: **Mittal, S.**, Zeigler, B.P., (2005) [Dynamic Simulation Control with Queue Visualization](#), Summer Computer Simulation Conference SCSC'05, Philadelphia, PA
- C.1: **Mittal, S.**, Wu, W., Zeigler, B.P., (2004) [A Multiconstraint-Based Real-time Routing Scheme using Simulation Methodology](#), Summer Computer Simulation Conference, San Jose, CA