

## Curriculum Vitae

**Eugene Santos Jr.**

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### 1 Biographical Information

#### 1.1 Education

Feb 2007	<b>M.A., Honorary, Dartmouth College</b>
May 1992	<b>Ph.D., Computer Science, Brown University</b>
May 1988	<b>Sc.M., Computer Science, Brown University</b>
September 1986	<b>M.Sc., Mathematics, Youngstown State University</b>
September 1985	<b>B.S., Mathematics and Computer Science – Summa cum laude, Youngstown State University</b>

#### 1.2 Professional History

Jul 05 -	Professor, Thayer School of Engineering, Dartmouth College
Jul 05 -	Director, Distributed Information and Intelligence Analysis Group (DI <sup>2</sup> AG), Thayer School of Engineering, Dartmouth College
Aug 97 - Jul 05	Director, Intelligent Distributed Information Systems Laboratory, University of Connecticut
Aug 97 - Jul 05	Associate Professor, Computer Science and Engineering, University of Connecticut
Aug 02 - May 04	Associate Director, The Taylor L. Booth Engineering Center for Advanced Technologies, University of Connecticut
Dec 01 - Aug 02	Interim Director, The Taylor L. Booth Computing Research Center, University of Connecticut
Aug 01 - Dec 01	Associate Director, The Taylor L. Booth Computing Research Center, University of Connecticut
Aug 97 - Aug 00	Adjunct Associate Professor, Department of Electrical and Computer Engineering, Air Force Institute of Technology

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Nov 92 - Aug 97 Assistant Professor, Department of Electrical and Computer Engineering, Air Force Institute of Technology

### 1.3 Selected Honors and Awards

2013	Outstanding Contribution Award, IEEE Systems, Man, and Cybernetics Society
2012	IEEE Fellow for “contributions to decision support systems and reasoning under uncertainty”
2011	Best Paper Award at the International Defense and Homeland Security Simulation Workshop, Rome, Italy
2009	Runner-Up for Best Paper Award at The 22nd International FLAIRS Conference, Sanibel Island, FL
2004	Outstanding Contribution Award, IEEE Systems, Man, and Cybernetics Society
2000	Best Paper Award at The 13th International FLAIRS Conference, Orlando, FL
1992	Award for Outstanding Research – Sigma Xi, Brown Chapter
1992	Sigma Xi, Full Membership
1988	Sigma Xi, Associate Membership

## 2 Selected Scholarly Activities

### 2.1 Selected Publications

(from over 175 refereed technical publications)

1. Santos, Eugene, Jr., “A Linear Constraint Satisfaction Approach to Cost-Based Abduction,” *Artificial Intelligence* **65(1)**, 1-28, 1994.
2. Santos, Eugene, Jr., “On Linear Potential Functions for Approximating Bayesian Computations,” *Journal of the ACM* **43(3)**, 399-430, 1996.
3. Santos, Eugene, Jr., and Santos, Eugene S., “Polynomial Solvability of Cost-Based Abduction,” *Artificial Intelligence* **86(1)**, 157-170, 1996.
4. Santos, Eugene, Jr., Shimony, Solomon Eyal, and Williams, Edward, “Hybrid Algorithms for Approximate Belief Updating in Bayes Nets,” *International Journal of Approximate Reasoning* **17(2-3)**, 191-216, 1997.
5. Santos, Eugene, Jr., “On Multiple Spline Approximations for Bayesian Computations,” *Annals of Mathematics and Artificial Intelligence* **20(1-4)**, 267-300, 1997.
6. Santos, Eugene, Jr., and Shimony, Solomon Eyal, “Deterministic Approximation of Marginal Probabilities in Bayes Nets,” *IEEE Transactions on Systems, Man, and Cybernetics Part A: Systems and Humans* **28(4)**, 377-393, 1998.
7. Santos, Eugene, Jr. and Santos, Eugene S., “A Framework for Building Knowledge-Bases Under Uncertainty,” *Journal of Experimental and Theoretical Artificial Intelligence* **11**, 265-286, 1999.

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8. Santos, Eugene, Jr. and Young, Joel D., "Probabilistic Temporal Networks: A unified framework for reasoning with Time and Uncertainty," *International Journal of Approximate Reasoning* **20**, 263-291, 1999.
9. Santos, Eugene, Jr., "Verification and Validation of Knowledge-Bases Under Uncertainty," *Data and Knowledge Engineering* **37**, 307-329, 2001.
10. Santos, Eugene, Jr., Santos, Eugene S., and Shimony, Solomon Eyal, "Implicitly Preserving Semantics During Incremental Knowledge Base Acquisition Under Uncertainty," *International Journal of Approximate Reasoning* **33(1)**, 71-94, 2003.
11. Zhang, Feng, Mawardi, Andryas, Santos, Eugene, Jr., Pitchumani, Ranga, and Achenie, Luke, "Examination of Load-Balancing Methods to Improve Efficiency of a Composite Materials Manufacturing Process Simulation Under Uncertainty using Distributed Computing," *Future Generation Computer Systems* **22(5)**, 571-587, 2006.
12. Zhang, Feng, Santos, Eugene, Jr., and Luh, Peter B., "A Performance Study of Multi-Agent E-Scheduling and Coordination Framework for Maintenance Networks," *IEEE Transactions on Systems, Man, and Cybernetics: Part C* **37(1)**, 52-65, 2007.
13. Santos, Eugene, Jr. and Dinh, Hang T., "Automatic Knowledge Validation for Bayesian Knowledge Bases," *Data and Knowledge Engineering* **64**, 218-241, 2008.
14. Santos, Eugene, Jr. and Li, Deqing, "Deception Detection in Multi-Agent Systems," *IEEE Transactions on Systems, Man, and Cybernetics: Part A* **40(2)**, 224-235, 2010.
15. Nguyen, Hien, Santos, Eugene, Jr., Russell, Jacob, and Smith, Nathan, "Evaluation of the Impact of User-Cognitive Styles on Assessment of Text Summarization," *IEEE Transactions on Systems, Man, and Cybernetics: Part A* **41(6)**, 1038-1051, 2011.
16. Santos, Eugene, Jr., Wilkinson, John T., and Santos, Eunice E., "Fusing Multiple Bayesian Knowledge Sources," *International Journal of Approximate Reasoning* **52(7)**, 935-947, 2011.
17. Santos, Eugene, Jr., Nguyen, Hien, Yu, Fei, Kim, Keum Joo, Li, Deqing, Wilkinson, John T., Olson, Adam, and Jacob, Russell, "Intelligence Analyses and the Insider Threat," *IEEE Transactions on Systems, Man, and Cybernetics: Part A* **42(2)**, 331-347, 2012.
18. Santos, Eugene, Jr., Li, Deqing, Santos, Eunice E., and Korah, John, "Temporal Bayesian Knowledge Bases - Reasoning about Uncertainty with Temporal Constraints," *Expert Systems With Applications* **39**, 12905-12917, 2012.
19. Santos, Eugene, Jr., Gu, Qi, and Santos, Eunice E., "Bayesian Knowledge Base Tuning," *International Journal of Approximate Reasoning* **54(8)**, 1000-1012, 2013.
20. Santos, Eunice E., Santos, Eugene, Jr., Pan, Long, Wilkinson, John T., Thompson, Jeremy E., and Korah, John, "Infusing Social Networks With Culture," *IEEE Transactions on Systems, Man, and Cybernetics: Systems* **44(1)**, 1-17, 2014.

## 2.2 Selected Active Grants and Awards

*Additional cost-sharing funds for individual grants not included in totals.*

- **(PI:)** Santos, Eugene, Jr., and (co-PI:) Nguyen, Hien, "Dynamic Context-Centric Commanders Decision Support through Real-time Inverse Reinforcement Learning," \$682k, Office of Naval Research, Grant No. N00014-15-1-2154, 5/2015 - 4/2018.

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- **(PI:)** Santos, Eugene, Jr. and (co-PIs:) Santos, Eunice E., “Understanding Targets as Complex Adaptive Systems: A Rigorous Computational Frame-work for Dynamic Composition and Aggregation Under Uncertainty,” Naval Postgraduate School Research Initiative, Grant No. N00244-15-1-0046, \$450k, 5/2015 - 4/2018.
- **(PI:)** Santos, Eugene, Jr., “Risk Quantification and Estimation,” Department of Defense (via Securborator, Inc.), \$250k, 10/2014 - 9/2016.
- **(PI:)** Santos, Eugene, Jr., “Critical Computational Infrastructure for Real-World Large-Scale Decision-Making Support Systems,” \$280k, Office of Naval Research (pending final contracting), 8/2015 - 7/2016.
- **(PI:)** Santos, Eugene, Jr. “A Social, Cultural, and Emotional Basis for Trust and Suspicion: Manipulating Insider Threat in Cyber Intelligence & Operations,” \$200k, Air Force Office of Scientific Research (via Illinois Institute of Technology) (pending final contracting), 1/2015 - 7/2016.

### 2.3 Recent Editorships

2015 - 2018	Editorial Board, <i>Computational Intelligence</i>
2008 -	Editorial Board, <i>Journal of Experimental and Theoretical Artificial Intelligence</i>
2008 -	Editorial Board, <i>Journal of Intelligent Information Systems</i>
2002 -	Associate Editor, <i>International Journal of Image and Graphics</i>
2013 - 2014	Editor-in-Chief, <i>IEEE Transactions on Cybernetics</i>
2008 - 2012	Editor-in-Chief, <i>IEEE Transactions on Systems, Man, and Cybernetics: Part B</i>

### 2.4 Selected Professional Society Activities

2015	Member, IEEE Publication Services and Products Board (PSPB) Strategic Planning Committee
2012 - 2014	Member, Committee on Nominations, Sigma Xi
2008 -	Member, Steering Committee, IEEE Transactions on Computational Intelligence and AI in Games
2008 - 2013	Member, Distinguished Lecturer (DL) Committee, IEEE Systems, Man, and Cybernetics Society
2008 - 2013	Member, Awards Committee, IEEE Systems, Man, and Cybernetics Society