Curriculum Vitae

Colonel Paul Evangelista
Professor of Systems Engineering and Chief Data Officer
United States Military Academy
email: paul.evangelista@westpoint.edu

1. Education:

1996 – Bachelor of Science in Systems Engineering
United States Military Academy, West Point, New York

2005 – Master of Science in Operations Research and Statistics
Rensselaer Polytechnic Institute, Troy, New York

2006 – Doctor of Philosophy in Decision Sciences and Engineering Systems
Rensselaer Polytechnic Institute, Troy, New York

2017 – Master of Strategic Studies
United States Army War College, Carlisle, Pennsylvania

2. Service on faculty, United States Military Academy:

2005-2007, Instructor
2007-2008, Assistant Professor
2012-2015, Assistant Professor
2015-2023, Associate Professor
2023-present, Professor of Systems Engineering

3. Other related experience:

1996-2005, US Army Engineer Officer, Company Commander during Operation Iraqi Freedom I
2008-2012, Operations Research Analyst for the TRADOC Analysis Center and thesis advisor, Naval Postgraduate School
2011, January-July, Deputy Chief of Data Cell Forward TRADOC Analysis Center, Kabul, Afghanistan
2013, June-December, Chief of Operations Research and Data Analysis, Combined Joint Force Paladin (Counter-Improvised Explosive Devices), Bagram, Afghanistan
Graduate of US Army Ranger School, Sapper Leader Course, Air Assault School, and Airborne School
2016-present, program evaluator (PEV), ABET Engineering Accreditation Commission
2015-2022, co-editor and special issue editor for the *Industrial and Systems Engineering Review*
2021-present, Chief Data Officer, United States Military Academy
2022-present, member of editorial board, West Point Press
2022-present, editor in chief, *Industrial and Systems Engineering Review*

4. Professional licensure:

Professional Engineer (industrial and systems engineering discipline) as of 2014, New York State, License #093743

5. Scholarly publications (link to Google scholar page):

Thesis and Dissertation

Evangelista, P.F. *The Unbalanced Classification Problem: Detecting Breaches in Security*. Dissertation. Rensselaer Polytechnic Institute, December 2006. *(Received Del and Ruth Karger dissertation award)*

Evangelista, P.F. *Computer Intrusion Detection through Statistical Analysis and Prediction Modeling*. Master's Thesis. Rensselaer Polytechnic Institute, May 2005.

Program Research Project

Evangelista, P.F. *Risk Management for National Defense: A Systems Thinking Approach*. Program Research Project. United States Army War College, May 2017.

Refereed Journal Articles

Lawrence, B., V. Mittal, P. Evangelista, and B.M. McConnell. "A Data-Centric Approach to Analyze Military Operations Leveraging National Training Center Data". *Journal of DoD Research & Engineering*. December 2022, volume 5(4), pp. 1-9.

Downey, J., Z. Ellis, E. Nguyen, C. Spencer, and P. Evangelista. "Data Analytics Development from Military Operational Data." *Industrial and Systems Engineering Review*, January 2022, volume 9(2), pp. 76-82.

Evangelista, P., N. Clark, M. Dabkowski, and I. Kloo. "Modeling and Analysis in Support of Organizational Decisions During the COVID-19 Pandemic". *Industrial and Systems Engineering Review*, December 2021, volume 9(1), pp. 2-14.

Evangelista, P., and D. Beskow. "Geospatial Point Density". *The R Journal*, December 2018, volume 10(2), pp. 347-356.

Grubaugh, K., Z. Zimmerman, N. McAfee, E. McGowan, and P. Evangelista. "Anomaly Detection and Accuracy Measurement for Categorical Data". *Industrial and Systems Engineering Review*, December 2018, volume 6(2), pp. 88-94.

Aten, C., Michalowski, A., Williams, M., Stamm, C. and Evangelista, P. "Soldier Power Operational Benefit Analysis". *Industrial and Systems Engineering Review*, June 2015, volume 3(2), pp. 82-90.

Bates, A., Bell, Z., Mountford, A. and Evangelista, P. "Military Resource Allocation as a Set Covering Problem". *Industrial and Systems Engineering Review*, January 2015, volume 3(1), pp. 1-6.

Evangelista, P., C. Darken, and P. Jungkunz. "Modeling and Integration of Situational Awareness and Soldier Target Search". *Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*. January 2013, volume 10(1), pp. 3-21.

Refereed Conference Proceedings

Mittal, V. and P. Evangelista. "Capturing Soldier Fitness Levels in Combat Simulations." Proceedings of the 2024 Winter Simulation Conference, Orlando, FL, December 2024.

Mittal, V. and P. Evangelista. "Accounting for Individual Shooting Skills in Combat Models." Proceedings of the 2023 Winter Simulation Conference, San Antonio, Texas, December 2023.

Evangelista, P., V. Mittal. "Nonparametric Density Estimation: A Numerical Exploration." Proceedings of the 2022 Winter Simulation Conference, Singapore, December 2022.

Evangelista, P., V. Mittal. "Recursive Midpoint Search for Line of Sight." Proceedings of the 2021 Winter Simulation Conference, Phoenix, Arizona, December 2021.

McDonald, C., C. Hogue, J. Ashley, B. Blejski, A. Barraza, P. Donner, T. Leary, P. Evangelista, and A. St. Leger. "Investigating Machine Learning for Anomaly Detection in Phasor Measurement Unit Data." Proceedings of the 52nd North American Power Symposium, Tempe, Arizona, April 2021.

Lovell, G., and P.F. Evangelista. "The Effects of Body Armor Load and Speed on Soldier Survivability." Proceedings of the American Society for Engineering Management 2019 International Annual Conference, Philadelphia, Pennsylvania, October 2019.

Gilliam, A., P. Jaros, M. Park, T. Young, and P.F. Evangelista. "Understanding How Soldier Load Effects Soldier Performance." Proceedings of the American Society for Engineering Management 2018 International Annual Conference, Coeur d'Alene, Idaho, October 2018.

Murray, S., A. Pattillo, M. Robertson, T. Ross, and P.F. Evangelista. "Soldier Load Effect Considerations for Material Acquisition." Proceedings of the American Society for Engineering Management 2017 International Annual Conference, Huntsville, AL, October 2017.

Arcilla, S., Larry, K., Maldonado, G., Malm-Annan, J., and P.F. Evangelista. "Modeling Time Based Power for Military Dismounted Small Units." Proceedings of the Annual General Donald R. Keith Memorial Conference, West Point, NY, 2017.

Abdelkhalek, S., Canara, A.J., Evangelista, P.F., French, K., Penick, N. "Soldier Power Decision Support Tool." Proceedings of the Annual General Donald R. Keith Memorial Conference, West Point, NY, 2016.

Bailey, O., and P.F. Evangelista. "Chasing Excellence." Proceedings of the Annual General Donald R. Keith Memorial Conference, West Point, NY, 2016.

Evangelista, P.F. and J.B. Demarest. "All Decision Problems Are Not Created Equal." Proceedings of the 4th Annual World Conference of the Society for Industrial and Systems Engineering, Fort Lauderdale, FL, 2015.

Aten, C., Michalowski, A., Stamm, C., Williams, M., and P.F. Evangelista. "Soldier Power on the Battlefield." Proceedings of the Annual General Donald R. Keith Memorial Conference, West Point, NY, 2015.

Philie, M., and P.F. Evangelista. "The Effect of Rotating Band Obturators on Artillery Round Deceleration in the Soft Catch Gun." Proceedings of the 3rd Annual World Conference of the Society for Industrial and Systems Engineering, San Antonio, Texas, 2014.

Bates, A., Bell, Z., Mountford, A. and P.F. Evangelista. "The Set Covering Problem Applied to Military Air Medical Evacuation". Proceedings of the 3rd Annual World Conference of the Society for Industrial and Systems Engineering, San Antonio, Texas, 2014.

Evangelista, P., I. Balogh, C. Darken, and J. Ruck. "Visual Awareness in Combat Models". Proceedings of the 20th Conference of Behavior Representation in Modeling and Simulation. Sundance, Utah, 2011.

Hasting, M., Chung, T.H., and P.F. Evangelista. "Experimentation and Modeling of Soldier Target Search." Proceedings of the 14th Annual International Conference on Industrial Engineering Theory, Applications, and Practice. Anaheim, California. October 2009.

Galbreath, D., J. Griffin, C. Landers, J. Roach, and P.F. Evangelista. "Measuring the Effects of Counter-Improvised Explosive Device (C-IED) Activities." Proceedings of the 13th Annual International Conference on Industrial Engineering Theory, Applications, and Practice. Las Vegas, Nevada. September 2008.

Evangelista, P.F., M.J. Embrechts, and B.K. Szymanski. "Synergistic Classifier Fusion for Security Applications." Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC) 2007. Orlando, Florida. November, 2007.

Embrechts, M.J., P.F. Evangelista, B. Heyns, and W. Bogaerts. "Automated Text Categorization Based on Readability Fingerprints." International Conference on Artificial Neural Networks. Porto, Portugal. September, 2007.

Evangelista, P.F., M.J. Embrechts, and B.K. Szymanski. "Some Properties of the Gaussian Kernel for One Class Learning." International Conference on Artificial Neural Networks. Porto, Portugal. September, 2007.

Griffin, G., P.F. Evangelista, S.R. Goerger, N.C. Goerger, and P.W. Richmond "Insights into Insurgent Decisioning and Response to Traffic Flow Strategies". Proceedings of the 2006 Fall Simulation Interoperability Workshop. Orlando, FL. September, 2006.

Evangelista, P.F., M. J. Embrechts, and B.K. Szymanski. "Data Fusion for Outlier Detection through Pseudo ROC Curves and Rank Distributions". *Proceedings of the International Joint Conference on Neural Networks*. Vancouver, Canada. July, 2006.

Evangelista, P.F., P. Bonissone, M. J. Embrechts, and B. Szymanski "Fuzzy ROC Curves for Unsupervised Nonparametric Ensemble Techniques". *Proceedings of the International Joint Conference on Neural Networks*. Montreal, Canada. June, 2005.

Evangelista, P.F., P. Bonissone M. J. Embrechts, and B. Szymanski. "Unsupervised Fuzzy Ensembles and Their Use in Intrusion Detection". *Proceedings of the 13th European Symposium on Artificial Neural Networks.* Bruges, Belgium. April, 2005.

Evangelista, P.F., M. J. Embrechts, and B. Szymanski. "Computer Intrusion Detection Through Predictive Models." In Cihan H. Dagli, Anna L. Buczak, David L. Enke, Okan Ersoy, and Mark J. Embrechts, editors, *Smart Engineering System Design: Neural Networks, Fuzzy Logic, Evolutionary Programming, Data Mining and Complex Systems*. pp. 489-494. ASME Press, 2004.

Book Chapters

Evangelista, P.F. and G. LeBlanc. "Most Improved Student: Understanding Positive Change in Academic Performance with Case Studies from West Point." In Jakob Bruhl, Rachel Sondheimer, Raymond Kimball, Morten Ender, editors. *Teaching and Learning the West Point Way*. pp. 211-229. Routledge, 2020.

Evangelista, P.F., M. J. Embrechts, and B. Szymanski. "Taming the Curse of Dimensionality in Kernels and Novelty Detection." In Ajith Abraham, Bernard de Baets, and Mario Koppen, and Bertam Nickolay, editors. *Applied Soft Computing Technologies: The Challenge of Complexity*. pp. 431-444. Springer Verlag, 2006.

Software

Evangelista, P.F., D.M. Beskow. *pointdensityP: Point density for geospatial data*. R package version 0.3.5, December 2020. URL http://cran.r-project.org/web/packages/pointdensityP.

Technical Reports

Evangelista, P.F., J. Pearman, J. Russell, R. Jacobs, and S. Bitner. "Analysis of Focused Operations and Village Stability Operations in Afghanistan". TRADOC Analysis Technical Report #TRAC-M-TR-13-001, October 2012.

Evangelista, P.F., S. Bader, R. Cozart, S. Gauthier, and S. Holden. "Analysis and Visualization of Point Processes in Military Operations." TRADOC Analysis Center Technical Report #TM-M-TM-12-040, May 2012.

Evangelista, P.F., D. Hudak. "Representing Network Enabled Soldiers in Models and Simulation". TRADOC Analysis Center Technical Report, June 2011.

Evangelista, P.F., D. Dannhaus, B. Hanson, and M. Wolfe. "Military Intelligence Force Rebalance: Cost Estimation and Operational Benefit Analysis for FY2014-2017". TRADOC Analysis Center Technical Report #TRAC-M-TR-11-002, November 2010.

Baez, F.R., S. Buttrey, R. Dees, P.F. Evangelista, D. Hudak, M. McCauley, G. Pearman, J. Thomas, and J. Vargas. "Soldier Domain Technologies Experimentation and Analysis Report." TRAC-Monterey Technical Report, October 2009.

Evangelista, P.F., D.H. Henderson. "Capabilities Based Budget Forecasting." Operations Research Center of Excellence Technical Report #DSE-TR-0715, DTIC #ADB336488, United States Military Academy, December 2007.

6. Student theses advised:

Served as primary advisor:

Beninati, Albert. "Proposal for National Training Center Analysis Methodology." Senior Honors Thesis. U.S. Military Academy, 2020.

Baumeister, Katie. "Mechanisms of Action Algorithm Development and Analysis: A Targeted Model on Predicting Pharmacological Activity." Senior Honors Thesis. U.S. Military Academy, 2020.

Kim, Seong. "Machine Learning Workflow Exploration." Senior Honors Thesis. U.S. Military Academy, 2019.

Lovell, Gabrielle. "The Effects of Body Armor Load and Speed on Soldier Survivability." U.S. Military Academy, 2019.

Croman, Cecilia. "Set Covering Location Problem Using Point Density." U.S. Military Academy, 2018.

Bailey, O. "Chasing Excellence." Senior Honors Thesis. U.S. Military Academy, May 2016.

Philie, M. "The Effect of Rotating Band Obturators on Artillery Round Deceleration in the Soft Catch Gun." Senior Honors Thesis. U.S. Military Academy, May 2013.

Served as thesis committee member:

Lawrence, B. "US Army Performance Analytics in Deployed and Training Environments." Master's Thesis. North Carolina State University, May 2022.

Eaton, J. "Linking Adaptation Processes to Team Performance in High-Tempo, High-Stakes Teamwork: A Large-Scale Gaming Perspective". Ph.D. Dissertation. Rensselaer Polytechnic Institute, May 2020.

Served as second reader:

Starling, J. "Prioritizing Unaided Human Search in Military Simulations". Master's Thesis, Naval Postgraduate School, June 2011.

Beskow, D. "Spatial and Temporal Analysis of Tactical Integrated Ground Reporting". Master's Thesis, Naval Postgraduate School, June 2011.

Wilson, L. "Network Analysis of Soldier Domain Technology Using the EPLRS Radio System." Master's Thesis. Naval Postgraduate School, October 2010.

Hasting, M. "Combat Simulation of Individual Soldier Search in Urban Terrain". Master's Thesis, Naval Postgraduate School, June 2009.

Markham, Randall C. "Threat Mapper: Measures of Certainty for Threat Activity Forecasts". Senior Honors Thesis. U.S. Military Academy, May 2008.

7. Invited Talks

Evangelista, Paul, Matt Dabkowski, Nick Clark, Ian Kloo, and Courtney Razon. "Some Lessons Learned from COVID Analysis: Truth in Numbers." Invited by the American Society of Engineering Management, West Point Student Chapter, 22 September 2020.

Evangelista, Paul. Keynote Address. 11th Annual World Conference of the Society for Industrial and Systems Engineering, Virtual Conference, 6-7 October 2022.

Evangelista, Paul. Invited Speaker. Chief Digital Officer Summit. Boston, MA, 6 December 2022.

8. Honors and Awards:

- U.S. Army Operational Analysis Award (recipient, 2021)
- Hollis Award for Excellence in Operations Research (advisor to recipients, 2021)
- 2nd place, Donald R. Keith Capstone Conference Best Paper (advisor to recipients, 2018)
- Distinguished Graduate, US Army War College (recipient, 2017)
- Hollis Award for Excellence in Operations Research (advisor to recipients, 2016)
- 3rd place, Donald R. Keith Capstone Conference Best Paper (advisor to recipients, 2015)
- 2nd place, WINFORMS Student Excellence Award (advisor to recipients, 2014)
- TRADOC Analysis Center Nominee for Payne Award, Small Category (nominee, 2012)
- MORS Wayne P. Hughes Junior Analyst Award (recipient, 2008)
- Del and Ruth Karger Dissertation Award (recipient, 2007)
- I/ITSEC Doctoral Scholarship (recipient, 2006)
- Rensselaer Founders Award of Excellence (recipient, 2005)
- Phi Kappa Phi National Honor Society (inductee, USMA, 1996)
- National Society Colonial Dames XVII Century Award for Top Graduate in Systems Engineering (recipient, USMA, 1996)