# RORY A. LEWIS

Associate Professor, University of Colorado at Colorado Springs
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Colorado Springs CO 809933-7150, 719.255.3149
rlewis5@uccs.edu rorylewis.com


## A. PROFESSIONAL PREPARATION

| College/University | Major | Degree | Year |
|---|---|---|---|
| Syracuse University | Computer & Electrical Engineering | B.S. | 1993 |
| Syracuse University College of Law | Law | J.D. | 1996 |
| University North Carolina at Charlotte | Computer Science | Ph.D. | 2008 |

## B. ACADEMIC/PROFESSIONAL APPOINTMENTS

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|---|---|
| 2008 - Present | Associate Professor, University of Colorado at Colorado Springs, CO. |
| 2007 - 2008 | Lecturer, Catawba College, NC. |
| 2006 - 2008 | Lecturer, University of North Carolina at Charlotte, Business School, NC. |
| 2003 - 2008 | Lecturer, University of North Carolina at Charlotte, Engineering School, NC. |

## C. PEER-REVIEW PUBLICATIONS

56. T. Sultana. K. Walcot, R. Lewis. "SP-LOC: Schema for Developing Datasets and ML Prognostic Algorithm to Prevent Adversarial Attack in Satellite Laser Communication". *8th Future of Information and Communication Conference (FICC 2024)*, April 4th – 5th Berlin, Germany, 2024.
55. M. Bihn, R. Lewis. "Driving Factor of Brain Growth is the Connectome Development". *The 8th International Conference on Neuroscience and Cognitive Brain Information*, (*BRAININFO 2023*). March 13th – 17th Barcelona, Spain, 2023.
54. K. Nesterenko, R. Lewis, "Rough Sets for Intelligence on Embedded Systems," *26th International Symposium on Methodologies for Intelligent Systems* (*ISMIS 2022*). October 3rd – 5th, Cosenza, Italy, Pending, 2022.
53. V. Bann, R. Rabinovitz, M. Stidd, R. Lewis, P. N. Brown, G. Bloom, "The Tragedy of the Attacking Miners." *IEEE Consumer Communications & Networking Conference* (*CNCC 2022*). January 8th – 11th, Las Vegas, NV, 2022.
52. C. Hendrix, R. Lewis, "Blockchain Privacy Challenges: A Path Forward." *2nd International Workshop on Blockchain and Enterprise* (*BES 2021*). November 24th – 25th, Riga, Latvia, 2022.
51. M. Bihn, R. Lewis. "Synthesis of Neonate Connectomes for Artificial Sentience and Common Sense". *The 6th International Conference on Neuroscience and Cognitive Brain Information* (BRAININFO 2021). July 18th – 22nd, Nice, France, 2021.
50. R. Lewis. "Rough Set & Riemannian Theory for Mining the Multidimensionality of Artificial Consciousness." *The 10th International Conference on Web Intelligence, Mining and Semantics*, (*WIMS 2020*). June 30th – 3rd July, Casino Barrière, Biarritz, France, 2020.
49 R. Lewis. "Chinese Artificial Intelligence in Space Wars" 5th International Conference on Artificial Intelligence and Applications, (*AI2019*). 29th Nov – 1st Dec, Dubai, UAE, 2019.
48. R. Lewis. "A Semantic Calculus: Common Sense Reasoning for Information Systems" *11th International Conference on Information Management and Engineering (ICIME 2019)* 19th – 21st September. British Computer Society at London Southbank and organized by the International Academy of Computing Technology (IACT), London, UK, 2019.
47. R. Lewis. "A Logical Theory Towards an Invariant Phenomenological State of Artificial Consciousness." *International Conference on Artificial Consciousness*, (*ICAC '19*). 22nd – 23rd April, New York, NY, 2019.
46. R. Lewis, C. Mello, Y. Zhuang, M. K. -C. Yeh, Y. Yan, D. Gopstein. "Rough Sets: Visually Discerning Neurological Functionality During Thought Processes." *The 24th Int. Symposium on Methodologies for Intelligent Systems*, (*ISMIS '18*), 29th – 31st October, St. Raphael, Limassol, 2018.

45. R. Lewis, "ISR-Brain Machine Intelligence for Unmanned Aircraft Systems" *2nd Int. Symp. of Intelligent Unmanned Systems on Artificial Intelligence, (SIUSAI '18)*, 27th – 29th August, Las Vegas, NV, 2018.
44. R. Lewis, "ISR-3D Terrain: Artificial Intelligence Multidimensional Mapping for Unmanned Aircraft Systems" *2nd International Symposium of Intelligent Unmanned Systems on Artificial Intelligence, (SIUSAI '18)*, 27th – 29th August, Las Vegas, NV, 2018.
43. R. Lewis, "Artificial Intelligence for Neuro ER: Give him Blood, or Oxygen, or Spinal Tap/Medication or a Craniotomy?" The 2018 *Military Health System Research Symposium (MHSRS).* August 20th – 23rd, Kissimmee, Fl, 2018.
42. R. Lewis, M. Bihn. "Cerebral Vasospasm Decision Support System for Neurosurgeons." *The 2017 International Conference on Computational Science and Computational Intelligence (CSCI '17)*: December 14th -16th, Las Vegas, Nevada, 2017.
41. R. Lewis, M. Bihn. "Artificial Intelligent Agent for Autonomous Prediction and Dynamic Feedback for High Performance Athletes." *The 2017 International Conference on Computational Science and Computational Intelligence (CSCI '17)*: December 14-16, Las Vegas, Nevada, 2017.
40. R. Lewis, C. Mello, Y. Zhuang, M. K. -C. Yeh, Y. Yan, D. Gopstein. "Visually Discerning Neurological Functionality During Intense Versus Trivial Thought Processes. *The 13th International Symposium on Medical Information Processing and Analysis* (*SIPAIM '17*): (poster), October 5 - 7, San Andres Island - Colombia, 2017.
39. K. Kamalaldin, R. Lewis, C. Mello, D. R. Cserpan, S. Zoltan, P. Erdi, Z. Borhegyi. "Classifying & Localizing Epileptic Brain States Using Structural Features of Neuronal Sugihara Causation Networks. In *Advanced Computational Neuroscience Network* (*ACNN '16*) *Midwest Workshop on Big Neuroscience Data, Tools, Protocols & Services*: Sept. 20-21, University of Michigan, Ann Arbor, Michigan, 2016.
38. A. Kennedy, R. Lewis. "Optimization of Neural Network Architecture for Biomechanic Classification Tasks with Electromyogram Inputs." *The 2nd International Conference on Advances in Bioscience and Bioengineering* (*ICABB '16*): October 26-2, San Francisco, CA, 2016.
37. A. Kennedy, R. Lewis. "Optimization of Neural Network Architecture for Biomechanic Classification Tasks with Electromyogram Inputs." *International Journal of Artificial Intelligence and Applications* (*IJAIA '16*), Vol. 7, No. 5, September 2016.
36. R. Lewis, M. Bihn and C. Mello. "Machine Intelligence: The Neuroscience of Chordal Semantics and its Association with Emotion Constructs and Social Demographics." *International Symposium on Methodologies for Intelligent Systems* Springer International Publishing (*ISMIS '15*): (pp. 290-299), October 21-23, Lyon, France, 2015.
35. R. Lewis, R. Broberg. "Seizure and Pathologic Oscillatory Detection by Entropy of the Discrete Amplitude Distribution." *The 7th International Conference on Similarity Search and Applications* (*SISAP '14*): (pp 247 – 252), October 29 -3, Los Cabos, Mexico, 2014.
34. C. Mello, R. Lewis, A. Brooks-Kayal, J. Carlsen, H. Grabenstatter, and A. M. White. "Semi-Autonomous Neuroclustering: Supervised Learning for the Neurosurgery Intensive Care Unit Using Single-Layer Perceptron Classifiers." *The International Conference on Brain Informatics and Health* (*BIH '14*): August 11 -14, Warsaw, Poland, 2014.
33. R. Lewis. "Neuroscience Rough Set for Credit Risk Analysis of Branchless Banking Subprime Loans." *The 21st International Symposium on Methodologies for Intelligent Systems* (*ISMIS '14*): (pp. 536 – 541), June 25 – 27, Roskilde, Denmark, 2014.
32. R. Lewis, J. Ellenberger, C. Williams and A. M. White. "Investigation into the Efficacy of Generating Synthetic Pathological Oscillations for Domain Adaptation." *In Proc. SPIE 8922, IX International Seminar on Medical Information Processing and Analysis International Society for Optics and Photonics* (*SPIE '13*): (pp. 89220E-89220E), November 11-14, México City, Mexico, 2013.
31. R. Lewis, C. Mello, J. Ellenberger, & A. M. White." Domain Adaptation for Pathologic Oscillations." *In Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing: 14th International Conference,* (*RSFDGrC ' 13*): (pp. 347-379), October 11-14, Halifax, NS, Canada, 2013.
30. R. Lewis, C. Mello, A. Brooks-Kayal, J. Carlsen, H. Grabenstatter, and A. M. White. "Autonomous neuro Clustering of Pathologic Oscillations Using Discretized Centroids." In (*MDA '13*): (pp. 12-23). 2013.
29. R. Lewis, C. Mello, A. Brooks-Kayal, J. Carlsen, H. Grabenstatter, and A. M. White. "Semi-Autonomous Neuroclustering: Using Centroidal Displacement Analysis." *9th International Conference on Machine Learning & Data Mining* (*MLDM '13*): July 15-20, New York City, NY, 2013

28. J. Carlsen, H. Grabenstatter, R. Lewis, C. A. Mello, A. Brooks-Kayal, and A. M. White. “Identification of Seizures in Prolonged Video-EEG Recordings.” *66th American Epilepsy Society Annual Meeting*, (*AES ‘12*): (poster), November 30 -December 4, San Diego, CA, 2012.
27. T. E. Boult, R Lewis. System and method for driver reaction impairment vehicle exclusion via systematic measurement for assurance of reaction time. (*USPTO*) U.S. Patent App. 12/980,899, 2011
26. R. Lewis, C. Mello, and A. M. White. “Tracking Epileptogenesis Progressions with Layered Fuzzy K-Means and K-Medoid Clustering.” *In Proceedings of the International Conference on Computational Science*, (*ICCS ‘12*): (Vol. 9, pp 432-438), June 4 - 6, Omaha, Nebraska, 2012.
25. R. Lewis and A. Waziri. “minedICE™: A Knowledge Discovery Platform For Neurophysiological Artificial Intelligence.” *In Proceedings of the 19th International Symposium on Methodologies for Intelligent Systems* Eds. Kryszkiewicz M., Rybinski H., Skowron A., Raś Z.W., Foundations of Intelligent Sys. Springer (*ISMIS ‘11*): (Vol. 6804, pp.575–580), , June 29-30, 2011.
24. R. Lewis, B. Parks, D. Shmueli, and A. M. White. “Detecting Epileptogenesis in Power Variant Domains.” *Journal of Control and Cybernetics* (*JC&C*): Eds. M. Klopotek, A. Ioffe, K. Malanowski and F. Troeltzsch, (Vol 40, pp. 293–314), 2011.
23. R. Lewis and A. M. White. “Multimodal Spectral Analysis and Discrete Finite Automata for Detecting Seizures.” *Intelligent Agent Technology, in Proc. of the IEEE/WIC/ACM International Joint Conf. on Web Intelligence & Intelligent Agent Technology* (*WI-IAT ‘10*): (Vol 2. Pp. 445 – 448), August 31 - Sept 3, Toronto, Canada, 2010.
22. R. Lewis, B. Parks, and A. M. White. “Determination of Epileptic Seizure Onset From EEG Data Using Spectral Analysis and Discrete Finite Automata”. *In Proceedings of the 2010 IEEE International Conference on Granular Computing* (*GrC ’10*), (pp. 277-282), August 14–16, San Jose, CA, 2010.
21. R. Lewis, B. Parks, D. Shmueli, and A. M. White. “Deterministic Finite Automata in the Detection of Epileptogenesis in a Noisy Domain.” *Proceedings of the Joint Venture of the 18th International Conference Intelligent Information Systems and the 25th International Conference on Artificial Intelligence* (*IIS ‘10*): (pp. 207–218), June 8-10, Siedlce, Poland, 2010.
20. X. Zhang, W. Jiang, Z. Raś , and R. Lewis. “Blind Music Timbre Source Isolation by Multi-Resolution Comparison of Spectrum Signatures.” *Rough Sets and Current Trends in Computing, in Proceedings of the 7th International Conference on RSCTC, M. Szezula et al. (EDs) LNAI 6068, Springer Berlin/Heidelberg* (*RSCTC ‘10*): (pp. 610-619), Warsaw, Poland, 2010.
19. R. Lewis and A. M. White. “Seizure Detection Using Sequential and Coincident Power Spectra with Deterministic Finite Automata.” In *Proceeding of Bioinformatics and Computational Biology* (*BIOCOMP ‘10*): (Vol. I, pp. 481–488), July 12-15, Las Vegas, Nevada, 2010.
18. R. Lewis, D. Shmueli, and A. M. White. “Deterministic Finite Automata in the Detection of EEG Spikes and Seizures.” In *Proceedings of The Joint Venture of The Ninth International Symposium on Intelligent Data Analysis (IDA ‘10)*: (pp. 103–113), May 19-21, Tucson, Arizona 2010.
17. T. E. Boult, A. T. Chamillard, R. Lewis, N. Polok, G. Stock, D. Wortman. "Innovations in University Education in Innovation: Moving Beyond the B.S." *International Journal of Innovation Science (IJIS)*: (Vol.1 no 4, pp.167-178), Feb. 2010.
16. R. Lewis, J. Kalita, S. Sarmah, and D. Bhattacharyya. “Music Industry Scalar Analysis Using Unsupervised Fourier Feature Selection.” *Recent Advances in Intelligent Information Systems, Academic Publishing House EXIT, in Proceedings of Intelligent Information Systems* (*IIS ‘09*): (pp. 485–494), June 15 - 18 Krakow, Poland, 2009.
15. R. Lewis, A. Cohen, W. Jiang, and Z. Raś. “Mining Chordal Semantics in a Non-Tagged Music Industry Database.” *Advances in Intelligent Information Systems, Academic Publishing House EXIT, Proceedings of Intelligent Information Systems* (*IIS ‘09*): (pp. 473–483), June 15 – 18, Krakow, Poland, 2009.
14. R. Lewis, A. Cohen, W. Jiang, and Z. Raś. “Hierarchical Tree for Dissemination of Polyphonic Noise.” In *Proceedings of The 6th International Conference on Rough Sets and Current Trends in Computing*, Springer-Verlag, Berlin, Heidelberg (*RSCTC ’08*): (pp. 448–456), Akron, OH, 2008.
13. Rory A. Lewis, Alicja Wieczorkowska. “Parameter-Based Categorization for Musical Instrument Retrieval.” *In Marzena Kryszkiewicz, James F. Peters, Henryk Rybinski, Andrzej Skowron, (Eds) Proceedings. of Rough Sets &Intelligent Systems Paradigms, International Conference*, Lecture Notes in Computer Science, Springer (*RSEISP ‘07*): (Vol. 4585, pp. 784-792 ) Warsaw, Poland, June 28-30, 2007.

12. R. Lewis, W. Jiang, and Z. Raś. "Mining Scalar Representations in a Non-Tagged Music Database." *Foundations of Intelligent Systems. In Proc. of LNAI*, Springer (ISMIS'08): (pp. 445–454), Toronto, Canada, 2007.
11. R. A. Lewis and A. Wieczorkowska. "Categorization of Musical Instrument Sounds Based on Numerical Parameters." Conceptual Structures: Knowledge Architectures for Smart Applications, in Proceedings of 15th International Conf. on Conceptual Structures, (ICCS '07): (Vol. 3, pp. 87-93), 2007.
10. R. Lewis, X. Zhang, and Z. Raś. MIRAI: Multi-hierarchical FS-Tree Based Music Information Retrieval System. (Invited Paper) *LNAI Springer, in Proceeding of Rough Sets and Intelligent Systems Paradigms*. (*RSEISP '07*): (pp. 28–30), June Warsaw Poland 2007.
9. R. Lewis and Z. Raś. "Rules for Processing and Manipulating Scalar Music Theory." *IEEE Computer Society* in Proceedings of the International Conference on Multimedia and Ubiquitous Engineering (*MUE '07*): (pp. 819–824), April 26-28, Seoul, Korea, 2007.
8. R. Lewis, Z. Raś : "Facial recognition", *Idea Group, Inc., 2008, John Wang (Ed.): Encyclopedia of Data Warehousing and Mining – 2nd Edition*, (*Journal*): (Vol. II, pp. 857-862), 2008.
7. A. Wieczorkowska, Z. Raś, X. Zhang, and R. Lewis. "Multi-Way Hierarchic Classification of Musical Instrument Sounds." Multimedia and Ubiquitous Engineering in Seoul, Korea, in *Proceedings of the IEEE CS Int. Conf. on Multimedia and Ubiquitous Engineering*(*MUE '07*): (pp.897–902), April 26-28, 2007.
6. R. Lewis, X. Zhang, and Z. Raś. "Blind Signal Separation of Similar Pitches and Instruments in a Noisy Polyphonic Domain." *International Symposium on Methodologies for Intelligent Systems.* Springer, Berlin, Heidelberg Foundations of Intelligent Systems, F. Esposito et al. (Eds.), LNAI, Springer, (*ISMIS '06*): (Vol. 4203, pp. 228–237), Bari, Italy 2006.
5. R. Lewis, X. Zhang, and Z. Raś. "Knowledge Discovery Based Identification of Musical Pitches and Instruments in Polyphonic Sounds." *International Journal of Engineering Applications of Matricidal Intelligence, Elsevier ISSN:0952-1976*, (Vol. 20, No. 5, pp. 637–645), August 2007.
4. A. Wieczorkowska, P. Synak, R. Lewis, and Z. Raś. "Creating Reliable Database for Experiments on Extracting Emotions from Music." In: Kłopotek M.A., Wierzchoń S.T., Trojanowski K. (eds) *Intelligent Information Processing and Web Mining. Advances in Soft Computing*. Springer, Berlin, Heidelberg (*IIS'05*): (Vol 31,pp. 395–404), Gdansk, Poland:, 2005.
3. A. Wieczorkowska, P. Synak, R. Lewis, and Z. Raś. "Extracting Emotions from Music Data." *International Symp. on Methodologies for Intelligent Sys. Foundations of Intelligent Systems,* M. S. Hacid et al. (Eds.), LNAI, Springer, (*ISMIS 2005*): (Vol. 3488, pp.456–465) Saratoga Springs, New York, 2005.
2. R. Lewis and Z. Raś. "Innertron: New methodology of facial recognition, Part II." Intelligent Information Processing and Web Mining. In *Proceedings of the Intelligent Information Processing Symposium,* Springer, Berlin, Heidelberg (*IIS 2005*): (pp. 625 – 632), June 13-16, Gdansk, Poland: 2005.
1. R. Lewis and Z. Raś. "Innertron: New methodology of facial recognition, Part I." Intelligent Information Processing and Web Mining. In *Proceedings of the Intelligent Information Processing Symposium,* Springer, Berlin, Heidelberg (*IIS 2005*): (pp. 1 – 9), June 13-16, Gdansk, Poland: 2005.

**JOURNALS & INVITED PAPERS**

5. R. Lewis, B. Parks, D. Shmueli, and A. M. White. "Detecting Epileptogenesis in Power Variant Domains." *Journal of Control and Cybernetics* (*JC&C*): Eds. M. Klopotek, A. Ioffe, K. Malanowski and F. Troeltzsch, (Vol 40, pp. 293–314), 2011.
5. T. E. Boult, A. T. Chamillard, R. Lewis, N. Polok, G. Stock, D. Wortman. "Innovations in University Education in Innovation: Moving Beyond the B.S." *International Journal of Innovation Science (IJIS)*: (Vol.1 no 4, pp.167-178), Feb. 2010.
4. R. Lewis, C. Mello, A. Brooks-Kayal, J. Carlsen, H. Grabenstatter, and A. M. White.. "Autonomous neuro Clustering of Pathologic Oscillations Using Discretized Centroids." In (*MDA '13*): (pp. 12-23). 2013.
3. R. Lewis, X. Zhang, and Z. Raś. MIRAI: Multi-hierarchical FS-Tree Based Music Information Retrieval System. (Invited Paper) *LNAI Springer, in Proceeding of Rough Sets and Intelligent Systems Paradigms*. (*RSEISP '07*): (pp. 28–30), June Warsaw Poland 2007.
2. R. Lewis, Z. Raś : "Facial recognition", *Idea Group, Inc., 2008, John Wang (Ed.): Encyclopedia of Data Warehousing and Mining – 2nd Edition*, (*Journal*): (Vol. II, pp. 857-862), 2008.

1. R. Lewis, X. Zhang, and Z. Raś. “Knowledge Discovery Based Identification of Musical Pitches and Instruments in Polyphonic Sounds.” *International Journal of Engineering Applications of Matricidal Intelligence, Elsevier ISSN:0952-1976*, (Vol. 20, No. 5, pp. 637–645), August 2007.

**INVITED SPEAKER**

4. KEYNOTE/PLENARY ADDRESS. 8th International Conference on Neuroscience and Cognitive Brain Information," Connectomic Synapsis with a Dynamic Neuron Onto a Solid State Device," International Academy, Research, and Industry Association. March 13th – 17th Barcelona, Spain, 2023.
3. KEYNOTE/PLENARY ADDRESS. *6th International Conference on Neuroscience and Cognitive Brain Information,* "The Role of Computational Neuroscience Machine Intelligence in Sentience, Common Sense and Artificial Consciousness.," International Academy, Research, and Industry Association, July 18th, Nice, France. 2021.
2. KEYNOTE/PLENARY ADDRESS. *2nd Annual Autonomous Capabilities for DoD. Exploiting Autonomy for Mission Success*, Sept. 19-20, Alexandria, VA., 2018.
1. KEYNOTE/PLENARY ADDRESS. *The Convergence of Artificial Intelligence and the Internet of Things*. Crowne Plaza, Palo Alto, CA. November 28 - 29, 2017.

**INTELLECTUAL PROPERTY**

1. T. E. Boult, R Lewis. System and method for driver reaction impairment vehicle exclusion via systematic measurement for assurance of reaction time. (*USPTO*) U.S. Patent App. 12/980,899, 2011

## D. SYNERGISTIC ACTIVITIES

**AWARDS & HONORS**

13. Recipient of Outstanding Achievement: Teacher of the Year. College of Engr (Student Vote), 2022.
12. Recipient of Outstanding Achievement: Teacher of the Year. College of Engr (Student Vote), 2019.
11. Recipient of Daniels Fund Ethics Initiative Faculty fellowship, 2019.
10. Recipient of Fellow for One-Year Sabbatical Research with USAF and Pentagon Classified AI, 2017.
9. Recipient of Outstanding Achievement: Teacher of the Year. College of Engr (Student Vote), 2018.
8. Designed and implemented AI for Greg LeMond Inc. 2015.
7. Designed and implemented AI for SKY Cycling team. 2016.
6. Designed and implemented AI for United States Olympic Committee. 2014.
5. Recipient of Outstanding Achievement: Teacher of the Year. College of Engr, Computer Science, 2012.
4. Recipient of Outstanding Achievement: Inventor of the Year CU. University of Colorado, 2011.
3. Designed and implemented AI in Neurosurgery Dept. at UC Denver Anschutz Medical School 2010 – 2016.
2. Recipient of the “Innovations in Scholarship for Inclusive Excellence” (ISIE) grant. This grant addresses topics of diversity and inclusiveness. UCCS 2009.
1. Published author of the Apress Signature iOS Series Books, used in colleges across the US and UK, published in 7 languages.
    - Lewis, R. A., & Mello, C. (2013). *iPhone and iPad Apps for Absolute Beginners iOS SDK 6.* Apress/Springer https://doi.org/10.1007/978-1-4302-4618-3
    - Lewis, R. A. (2013). *iPhone and iPad Apps for Absolute Beginners, iOS 7 Edition*. Apress/Springer https://doi.org/10.1007/978-1-4302-6362-3
    - Lewis, R. A., McCarthy, Y., & Moraco, S. M. (2012). *Beginning iOS Storyboarding*. Apress/Springer https://doi.org/10.1007/978-1-4302-4273-4
    - Lewis, R. A. (2012). *iPhone and iPad Apps for Absolute Beginners, iOS 5 Edition*. Apress/Springer https://doi.org/10.1007/978-1-4302-3603-0
    - Lewis, R. A. (2010). *iPhone and iPad Apps for Absolute Beginners*. Apress/Springer https://doi.org/10.1007/978-1-4302-2701-4

**PROGRAM COMMITTEE MEMBERSHIPS**
**JOURNALS:**

- Journal of Advances in Artificial Intelligence and Machine Learning (AAIML 2023).

- Journal of Intelligent Information Systems, Integrating Artificial Intelligence and Database Technologies (JIIS 2016).
- Journal of Intelligent Information Systems (JIIS 2013).
- Engr App. of AI, Int. Journal of Intelligent Real-Time Automation (EAAI 2012).
- Journal of Convergence IT by the Advanced Institute of Convergence IT Technology (JCIT 2011).
- International Journal of Advancements in Computing Technology (IJACT 2010).
- The Journal of Intelligent Systems Conferences & Fundamental Information Journal (ISCFI 2009).

**PROCEEDINGS**

- 26th International Symposium on Methodologies for Intelligent Systems (ISMIS 2022)
- 12th International Conference on Knowledge Discovery & Information Retrieval. (KDIR 2021)
- 17th International Conference on Informatics in Control, Automation and Robotics (ICINCO 2020)
- 25th International Symposium on Methodologies for Intelligent Systems (ISMIS 2020)
- International Conference on Artificial Consciousness, (ICAC 2019)
- International Joint Conference on Rough Sets (IJCRS 2019)
- 5th Annual Conference on machine Learning, Optimization and Data science (LOD 2019)
- 11th International Conference on Information Management and Engineering (ICIME 2019)
- 16th International Conference on Informatics in Control, Automation & Robotics (ICINCO 19)
- 24th International Symposium on Methodologies for Intelligent Systems (ISMIS 18)
- 1st International Conference on Data Intelligence and Security. (ICDIS 2018)
- 28th Modern Artificial Intelligence and Cognitive Science Conference. (MAICS 2017)
- International Joint Conference on Rough Sets (IJCRS 2016)
- 22nd International Symposium on Methodologies for Intelligent Systems. (ISMIS 2015).
- International Conference on Web Intelligence and the 2014 Web Intelligence Congress (BIH 2014).
- 21st International Symposium on Methodologies for Intelligent Systems (ISMIS 2014).
- 9th International Seminar on Medical Information Processing and Analysis (SIPAIM 2013).
- 5th International Conference on Intelligent Decision Technologies (IDT 2013).
- The 2012 International Conference on Information and Knowledge Engineering (IKE 2012).
- IPC/IBR, 2nd Asian Conf. on Intelligent Information & Database Systems (ACIIDS 2010).
- IEA-AIE, 22nd Intl Conf. on Industrial, Engineering &Applied Intelligent Sys. (IEA-AIE 2009).
- 18th International Symposium on Methodologies for Intelligent Systems (ISMIS 2009).
- IEEE ICDM International Workshop on mining complex data (MCD 2008).
- 17th International Symposium on Methodologies for Intelligent Systems (ISMIS 2007).
- Intelligent Information Systems, MCD - Mining Complex Data (IIS 2006).

**UNIVERSITY OF COLORADO | ADMINISTRATIVE ASSIGNMENTSS**

- Computer Science Department: Director: Masters' Degree Program (2011 - Present).
- Task Force: University of Colorado Spring's. Rewriting the Professional Rights and Responsibilities of Faculty Members and Roles and Professional Responsibilities of Academic Leaders (PRR). Nov 2020 - April 2022.
- Chair Hiring Committee. Computer Science Tenure Track. Jan 4 – April 9, 2023.
- Chair Hiring Committee. Computer Science Tenure Track. Feb 3 – March 15, 2022.
- Chair Hiring Committee. Computer Science Tenure Track. Jan 21 – Feb 21, 2021
- UC Board of Regents: Space War Preparation Center (SWPC), Organization, Director, 2019.
- Chair Hiring Committee. Computer Science Tenure Track. Nov 1 – Dec 12, 2020.
- Conference on SEO working with EAS Dean to Conference to UCCS (2009).

**UNIVERSITY OF COLORADO | COMMITTEES**

- Computer Science Department: Chair Hiring Committee, Tenure Track (2023).
- Computer Science Department: Chair Hiring Committee, Cyber Security Tenure Track (2020).
- College of Engineering: Committee on Research and Creative Works CRCW (2019).
- University of Colorado: Director Space War Preparation Center SWPC (2019 - 2020).

- College of Engineering: Committee for Bachelor of Arts Computer Science Degree (2019-2020)
- STEM & Diversity: Computational Neuroscience. Tours to Anschutz Medical School (2017 – 2019).
- College of Engineering: Hiring Committee Dean EAS (2019).
- College of Engineering: Chair Hiring Committee, DAZE Curriculum Committee (2019).
- College of Engineering: Gallogly Chair Hiring Committee (2019).
- Computer Science Department: Faculty Hiring Committee (2018).
- Computer Science Department: Multi-disciplinary Committee for Systems Degree (2017).
- Computer Science Department: Faculty Hiring Committee (2016).
- Computer Science Department: Chair: Library Committee (2008 - 2015).
- Computer Science Department: Equipment Purchasing Committee (2014).
- Computer Science Department: Director: Masters' Degree Program (2011 - Present).
- Conference on SEO working with EAS Dean to bring conference to UCCS (2009).

**SPONSORING | COMMITTEES**

- National Science Foundation (NSF): Served on 56 NSF Committees. CISE SBIR/STTR and IIS: SCH
- National Institute of Health: Served on 4 NIH Committees. IIS: SCH
- Department of Defense: Served on 2 DoD Committees. USAF/ISR. Special Ops. TS-SCI clearance.

**AFFILIATIONS | COLLABORATORS**

- Alayna Kennedy, Undergraduate Student. Bio Engineering, Pennsylvania State University.
- Alicja Wieczorkowska, Prof. Polish-Japanese Academy of Information Technology, Warsaw.
- Allen Waziri, M.D., Neurosurgeon / Clinical Researcher, Anschutz.
- Amanda Cohen, PhD Student. Computer Science, University of North Carolina.
- Amy Brooks-Kayal, M.D., Prof. of Ped. & Neurology, - Anschutz Medical Campus.
- Andrew M White, M.D., Assoc. Prof. Dir. of Pediatric Neurology at Denver's Health Medical Center.
- Andrez Skowron, Prof. Dean, Mathematics and Computer Science at Warsaw University.
- Biswajit Sarmah, Prof. Jorhat Engineering College, Jorhat, Assam, India.
- Brian Parks, PhD Student. Computer Science, University of Colorado Colorado Springs.
- Chad Mello, PhD Student. Computer Science, University of Colorado Colorado Springs.
- ConstanceHendrix, PhD Student. Computer Science. University of Colorado Colorado Springs.
- Dan Gopstein, Tandon School of Engineering, New York University, New York, New York.
- Dhruba Bhattacharya, Prof. Computer Science, Tezpur University, Tezpur, Assam, India.
- Doran Shmueli, Prof. Dir. of Adult Epilepsy Div. at U of Colorado School of Medicine.
- Dorottya Cserpan, Post-Doc Fellow. Neuropharmacology, Hungarian Academy of Sciences, Hungary.
- Gedare Bloom, Assist Prof. Dept. Computer Science, University of Colorado Colorado Springs
- Heidi Grabenstatter, Post-Doctoral Fellow SOM-PEDS - Anschutz Medical Campus.
- JessicaCarlsen, Post-Doctoral Fellow SOM-PEDS - Anschutz Medical Campus.
- Jugal Kalita, Prof. Dept. Computer Science, University of Colorado Colorado Springs.
- Kamal Kamalaldin, Undergraduate Student. Kalamazoo College, Kalamazoo Michigan.
- KatarinaNesterenko, PhD Student. Computer Science. University of Colorado Colorado Springs.
- Kristen Walcot, Assoc. Prof. Dept. Computer Science, University of Colorado Colorado Springs
- Mark Stidd, PhD Student. Computer Science. University of Colorado Colorado Springs.
- Mark Spitz, M.D., Prof. Dir. of Adult Epilepsy Div. at U of Colorado School of Medicine.
- Martin K. -C. Yeh, School of Information Sciences & Technology, Penn State, Media, Pennsylvania
- Michael Bihn, PhD Student, Computer Science, University of Colorado Colorado Springs.
- Peter Erdi, Prof. Neuropharmacology Group, Hungarian Academy of Sciences, Hungary.
- Philip N. Brown, Asst. Prof. Dept. Computer Science, University of Colorado Colorado Springs
- Piotr Synak, Asst. Prof. Polish-Japanese Academy of Information Technology, Warsaw.
- Ron Broberg, PhD Student. University of Colorado Colorado Springs.
- Ryan Rabinowitz, PhD Student. Computer Science. University of Colorado Colorado Springs.
- Somogyvari Zoltan, Assoc. Prof. Neuropharmacology Hungarian Academy of Sciences, Hungary.

- Taniza Sultana, PhD Student. Computer Science. University of Colorado Colorado Springs.
- Terrance. E Boult, Prof. Computer Science, University of Colorado Colorado Springs.
- Vijay Banerjee, PhD Student. Computer Science. University of Colorado Colorado Springs.
- Wishuan Jiang, PhD Student. Computer Science. University of North Carolina.
- Xing Zhang, PhD Student. Computer Science. University of North Carolina.
- Yanyan Zhuang, Asst. Prof. Dept. Computer Science, University of Colorado Colorado Springs
- Yu Yan, Department of Learning & Performance Systems, Penn State, University Park, Pennsylvania.
- Zbigniew Raś, Prof. Habilation. University of North Carolina Charlotte.
- Zsolt Borhegyi, Assoc. Prof. Neuropharmacology Group, Hungarian Academy of Sciences, Hungary.

**GRADUATE AND POSTDOCTORAL ADVISORS**

- Zbigniew Raś Dir. KDD Lab, University of North Carolina.

**THESIS ADVISOR AND POSTGRADUATE SCHOLAR SPONSORS:**

- **PhD Students:** Constance Hendrix, David Vadnais, Taniza Sultana, Katrina Nesterenko, Zanyar Zohourianshahzadi, Chad Mello, Chris Hammond, Matt Doman, Michael Bihn, Benjamin Garcia and James Ellenberger.
- **Masters Students:** Supriya Krishnappa, Helen Huang, Brandon Archuletta, Chad Credeur, Ali Al Shami, Bhakti Mehta, Maadh Hmosze, Gabriel Jordan, Nicholas Johnson, Ashely Whiteside, Gabriel Jordan, David Stites, Chad Mello, Devon Bryant, Daniel Ruiz, Colton Williams and Kelly McMurtrey.

## E. RESEARCH SUPPORT

**Pending Research Support**

- Lewis, R. A. (Principal), EFRI BRAID: "*Ultra-Low-Power Self-Learning Model Using Aa Synaptic-Based Connectomic Neuromorphic Morphology*," Sponsored by NIH, Federal, $1,608,138. (08/01/22 - 08/01/26)
- Lewis, R. A. (Principal), "*An Intelligent Computational Neuroscience Infrastructure*," Sponsored by NSF, Federal, $3,412,658.00.)
- Lewis, R. A. (Principal), "*IIS 1430339 CRCNS: Robust Intelligence for Neurosurgery Intensive Care Unit.*," Sponsored by NIH, Federal. $830,000.

**Current Research Support**

- Lewis, R. A. (Principal), Boult, T. (Co-Principal), Phase III "*Multivariate Algorithms for Optimized Test Heuristics and Real-time Analysis* (MAOTHRA)," Sponsored by MSCI, DoDINST 5205.02-M, Department of Defense Operations Security Program , $297,250.00.

**Completed Research Support**

- Lewis, R. A. (Principal), Boult, T. (Co-Principal), Phase II "*Multivariate Algorithms for Optimized Test Heuristics and Real-time Analysis* (MAOTHRA)," Sponsored by MSCI, Federal, $297,250.00.
- Lewis, R. A. (Principal), Boult, T. (Co-Principal), Phase I "*Multivariate Algorithms for Optimized Test Heuristics and Real-time Analysis* (MAOTHRA)," Sponsored by MSCI, Federal, $297,250.00
- Lewis, R. A. (Co-Principal), Boult, T. E. (Principal), Benight, C. C. (Co-Principal), "*Collaborative Research: Learning and Sensory-based Engagement, Arousal and Self- Efficacy* (EASE) modeling for Adaptive Web-Empowerment Trauma Treatment," Sponsored by NSF, Federal, $1,803,590.
- Lewis, R. A. (Co-Principal), Walcott-Justice, K. R. (Co-Principal), Kalita, J. K. (Principal), Yi, Q. (Co-Principal), Boult, T. E. (Co-Principal), "*Research Experiences for Undergraduates Sites*," Sponsored by National Science Foundation, University of Colorado Colorado Springs, (June 1, 2014 - May 31, 2017). $375,905.00.
- Lewis, R. A. (Principal), "*Artificial Intelligence for Long Distance Elite-Level Females*", , USOC United States Olympic Committee. (2012 - 2013). $70,000.00.
- Lewis, R. (Principal), "*Online Support Network for Users with Dependencies*, " Sponsored by NSF,

Small Business Technology Transfer (STTR). University of Colorado Colorado Springs, (2009 - 2010). $150,000.00.

- Lewis, R. (Principal), "*Innovations in Scholarship for Inclusive Excellence*," (2009) UCCS (INTERNAL) (ISIE) grant. $10,000.00.

**Sponsored Project**

- "*Model-Based Simulation for System of Systems Engineering*, " Harrison, W. K. (Co-Principal), Ketsdever, A. D. (Principal), Lewis, R. A. (Co-Principal), Cascaval, R. C. (Co-Principal), Lauderbaugh, L. K. (Co-Principal), Johnson, S. B. (Co-Principal). Sponsored by AMRDEC/MDA, Federal, (August 1, 2014 - December 31, 2014). $94,409.00.

## F. TEACHING

**UCCS**:

| | |
|---|---|
| • CS 4420/5420 | Database Systems |
| • CS 3060 | Object Oriented Programming with C++ |
| • CS 1450 | Data Structures |
| • CS 1150 | Java, Principles of Computer Science |
| • CS 5450: | KDD Apps in Neuroscience |
| • INOV 1010: | Bachelor of Innovation Lab |
| • INOV 2100: | Technical Writing, Proposals and Presentations |
| • CSCI 4802 5802: | iPhone and iPad Programming (@UC Denver, 2010) |
| • BLAW 2010: | Bus/Intellectual Property Law |
| • CS 2010: | iPhone iOS: Objective C |

**COMPUTER SCIENCE COURSES TAUGHT**

| | |
|---|---|
| • Database Systems | |
| • Object Oriented Programming with C++ | Data Structures |
| • KDD Apps in Neuroscience | Fuzzy & Rough Set Theory Data Mining |
| • Objective C | SEO |
| • Java | Database Security |
| • SQL Server | Logic and Design (Java & C#) |
| • C# | Data Structures |
| • C++ Object-Orientated Programming | Statistics for Decision Making |
| • Networking Concepts and App | Managerial Mathematics |
| • Internet-Oriented Programming | Business & eCommerce |
| • Database Apps in Commerce | SQL & ASP in .NET |
| • Decision Support / Expert Systems | Database Concepts |

**MBA COURSES TAUGHT**

| | |
|---|---|
| • Database Essentials For Decision Making | Business Law |
| • Managing Information Technology | Principles of Information Security & Privacy |
| • Information Security Law | Systems Analysis Planning & Control |
| • Strategic Management of Technology | Business Ethics |

**NON-CREDIT INSTRUCTION TAUGHT**

| | |
|---|---|
| • Black Engineering Society | 2017 - Present |
| • Mountain Lion, Guest Lecturer | March 16, 2018 |

**TEACHING EXPERIENCE**

| | |
|---|---|
| • University of Colorado at Colorado Springs | Department of Computer Science<br>Colorado Springs, CO 2008 - Present |

- University of Colorado at Denver — Department of Computer Science, Denver, CO 2010 – 2010
- Catawba College — Private Liberal Arts College, Charlotte, NC 2007 - 2008
- University North Carolina at Charlotte — School of Electrical & Computer Engineering, Charlotte, NC 2003 - 2008
- University North Carolina at Charlotte — Belk College of Business, Charlotte, NC 2007 - 2008
- Bank of America/Keller Grad. School of Mgmt. — Executive MBA Program for Bank of America, Charlotte, NC 2002 - 2008
- Providence High School — High School Math Teacher, Charlotte, NC 2001 - 2002

**G. PROFESSIONAL MEMBERSHIP**

- Senior Member, Association for Computing Machinery. (October 1, 2011 - Present).
- Senior Member, Institute of Electrical and Electronics Engineers. (May 6, 2009 - Present).

**H. PROFESSIONAL EXPERIENCE**

a. *Advisory Board Member and Director of Artificial Intelligence*. ENVEL Bank. an Artificial Intelligence enabled challenger bank created to address the needs of Generation Z and younger Millennials. https://www.envel.ai/team 2019 – Present

b. *Director: Space War Preparation Center (SWPC),* Harris Corporation, DoD & Board of Regents University of Colorado. 2019 – Present.

c. *RAND Corporation*: Researcher and Advisor. Scientific and legal parameters of AI and ML in DoD 2017 – Present.

d. *Warfighters Edge Research Laboratories*: Fellow. Classified AI and ML Research for Pentagon. USAF 2017 – 2019.

e. *Holland & Hart. LLP*: Statistical-Legal Analyst: Work with Charles R. Lucy Esq. Formulate algorithms, find patterns where opposing counsel tried to hide evidence and then present my findings to the partners at Holland & Hart. Colorado Springs, CO 2009 - 2012

f. *Pulte.* Fortune 500: Senior Executive Consultant: Developed, negotiated and implemented nationwide C++, Java, .ASP application to interact accounts payables servers with scheduling, field personnel and field servers. Charlotte, NC 1999- 2000

g. *Global Crossings*. Fortune 500: Senior Government Liaison: Conducted, prepared and scheduled meetings interacting VI Gov. officials with SAP, SAS, Cisco and IBM/Apache Server Executives. Drafted contracts and amendments. Prepped Government on the technology and set financial transfer protocol. St. Thomas, VI, 1999 – 1999

h. *Baikowski.* Private Executive Contractor: Worked with CEO, Floyd McClung: Technical advisor in litigation with France-based affiliate. Slurry technology for VLSI fabrication post litigation options/$; and present value of IP. Secured contract for Venture Capital in a secondary market as part of settlement procedures. Charlotte, NC 1999 - 1999

i. *Dougherty & Dremann LLP*. Associate: Law Firm: Set up eCommerce s-corps, off-shore enterprises, SAS and SAP eCommerce ERPs. Worked with programmers patenting and copyrighting eProms, VLSI, Java, C/C++ programs into patentable mathematical algorithms. Advised clients on emerging technologies. Charlotte, NC 1997 - 1999

j. *Skjervan Morrill MacPherson Friel LLP*. Law School: Legal Counsel: Continuation of AMD v. Intel Litigation: Microprocessor electrical circuit analysis for senior partners in microprocessor litigation. Member of Venture Capital team: Duties included financial modeling for high tech intellectual property. Evaluation of investment opportunities. Financial analysis reports & identification of high tech of risks and opportunities. San Francisco, CA 1995 - 1997

k. *Fulbright & Jaworski LLP. Law School*: Legal Counsel: AMD vs. Intel: High Tech Litigation. Patent rejections involving microprocessor electrical circuits and electronics. email security. Domain

Squatting and Black Hat SEO litigation. Devised deposition strategy to prove Intel engineers stole microprocessor Intellectual Property. Austin, TX 1994 – 1997

**I. CONNECTIONS AND PARTNERSHIPS**

a. *Relationship-building,* Peak Producers of Colorado Springs, COLORADO SPRINGS, CO. (May 9, 2022).
b. *Relationship-building*, Patty Jewett Golf Club Member's Business Group., COLORADO SPRINGS, CO. (June 29, 2021).
c. *Relationship-building,* Peak Producers of Colorado Springs, COLORADO SPRINGS, CO. (May 20, 2021).
d. *Relationship-building,* Patty Jewett Golf Club Member's Business Group., COLORADO SPRINGS, CO. (September 17, 2020).
e. *Relationship-building,* Colorado Springs Chamber of Commerce & EDC, COLORADO SPRINGS, CO. (December 18, 2019).
f. *Funding, Space War Preparation Center,* COLORADO SPRINGS, CO. (January 2019).