RORY A. LEWIS, J.D., Ph.D.

Associate Professor, University of Colorado Colorado Springs
Program Director: Master of Science in Computer Science
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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 of North Carolina at Charlotte	Computer Science	Ph.D.	2008

B. ACADEMIC APPOINTMENTS

2016–Present	Associate Professor, University of Colorado Colorado Springs, CO.
2014–2019	Adjunct Professor, University of Colorado Anschutz Medical Campus, Aurora, CO.
2008–2016	Assistant Professor, University of Colorado Colorado Springs, CO.
2007–2008	Lecturer, Catawba College, Salisbury, NC.
2006–2008	Lecturer, Belk College of Business, University of North Carolina at Charlotte, NC.
2005–2008	MBA Lecturer, Bank of America Executive MBA Training Program, Charlotte, NC.
2004–2007	Lecturer, University of Warsaw (summers), Warsaw, Poland.
2003–2008	Lecturer, College of Engineering, University of North Carolina at Charlotte, NC.

C. PEER-REVIEWED PUBLICATIONS

[60] R. Lewis, "The case for neuromorphic sentience to control large-scale artificial intelligence," *in Proc. 10th World Conf. Smart Trends in Systems, Security, and Sustainability (WorldS4)*, Jul. 28–30, 2026, *London, U.K*.

[59] R. Lewis, M. Bihn, and K. Nesterenko, "Rough sets for a neuromorphic CMOS system," *in Proc. 27th Int. Symp. Methodologies for Intelligent Systems (ISMIS)*, Jun. 17–19, 2024, pp. 102–111, doi: 10.1007/978-3-031-62700-2_10, *Poitiers, France*.

[58] H. Albanesi and R. Lewis, "Resistance to AI use in internet culture research: Join the dark side or bury our head in the sand?," *Popular Culture Association National Conf. (PCA)*, Mar. 27–30, 2024, *Chicago, IL, USA*.

[57] R. Lewis, M. Bihn, Z. Liu, and D. S. Barbotko, "A self-learning neuromorphic system," *in Proc. 9th Int. Conf. Neuroscience and Cognitive Brain Information (BRAININFO)*, Mar. 10–14, 2024, pp. 11–16, *Athens, Greece*.

[56] T. Sultana, K. R. Walcott, and R. Lewis, "JSP-LOC: Schema for developing datasets and ML prognostic algorithm to prevent adversarial attack in satellite laser communication," *in Proc. Future of Information and Communication Conf. (FICC)*, Apr. 4–5, 2024, vol. 1, pp. 389–401, doi: 10.1007/978-3-031-53960-2_25, *Berlin, Germany*.

[55] M. Bihn and R. Lewis, "A postulate: Connectome development is the driving factor of brain growth," *IARIA Annual Congress on Frontiers in Science, Technology, Services, and Applications*, Nov. 13–17, 2023, *Best Paper Award*, *Barcelona, Spain*.

[54] M. Bihn and R. Lewis, "Driving factor of brain growth is the connectome development," *in Proc. 8th Int. Conf. Neuroscience and Cognitive Brain Information (BRAININFO)*, Mar. 13–17, 2023, *Barcelona, Spain*.

[53] K. Nesterenko and R. Lewis, "Rough sets for intelligence on embedded systems," *in Proc. 26th Int. Symp. Methodologies for Intelligent Systems (ISMIS)*, Oct. 3–5, 2022, pp. 230–239, doi: 10.1007/978-3-031-16564-1_22, *Cosenza, Italy*.

[52] V. Banerjee, R. Rabinowitz, M. Stidd, R. Lewis, P. N. Brown, and G. Bloom, "The tragedy of the attacking miners," *in Proc. IEEE Consumer Communications & Networking Conf. (CCNC)*, Jan. 8–11, 2022, *Las Vegas, NV, USA*.

[51] C. Hendrix and R. Lewis, "Survey on blockchain privacy challenges," *in Proc. 2nd Workshop Blockchain and Enterprise Systems (BES), CEUR Workshop Proc.*, Nov. 24, 2021, vol. 3031, pp. 55–63, *Riga, Latvia*.

[50] M. Bihn and R. Lewis, "Synthesis of neonate connectomes for artificial sentience and common sense," *in Proc. 6th Int. Conf. Neuroscience and Cognitive Brain Information (BRAININFO)*, Jul. 18–22, 2021, pp. 1–10, *Nice, France*.

[49] R. Lewis, "Rough set & Riemannian covariance matrix theory for mining the multidimensionality of artificial consciousness," *in Proc. 10th Int. Conf. Web Intelligence, Mining and Semantics (WIMS)*, Jun. 30–Jul. 3, 2020, pp. 248–251, doi: 10.1145/3405962.3405974, *Biarritz, France*.

[48] R. Lewis, "Chinese artificial intelligence in space wars," *in Proc. 5th Int. Conf. Artificial Intelligence and Applications (AI)*, Nov. 29–Dec. 1, 2019, *Dubai, U.A.E*.

[47] R. Lewis, "A semantic calculus: Common sense reasoning for information systems," *in Proc. 11th Int. Conf. Information Management and Engineering (ICIME)*, Sep. 19–21, 2019, pp. 49–52, doi: 10.1145/3373744.3373755, *London, U.K*.

[46] R. Lewis, "A logical theory towards an invariant phenomenological state of artificial consciousness," *Int. Conf. Artificial Consciousness (ICAC)*, Apr. 22–23, 2019, *Best Presentation Award*, *New York, NY, USA*.

[45] R. Lewis, C. A. Mello, Y. Zhuang, M. K.-C. Yeh, Y. Yan, and D. Gopstein, "Rough sets: Visually discerning neurological functionality during thought processes," *in Proc. 24th Int. Symp. Methodologies for Intelligent Systems (ISMIS)*, Oct. 29–31, 2018, pp. 32–41, doi: 10.1007/978-3-030-01851-1_4, *Limassol, Cyprus*.

[44] R. Lewis, "ISR-Brain machine intelligence for unmanned aircraft systems," *in Proc. 2nd Int. Conf. Vision, Image and Signal Processing (ICVISP)*, Aug. 27–29, 2018, pp. 1–6, doi: 10.1145/3271553.3271594, *Las Vegas, NV, USA*.

[43] R. Lewis, "ISR-3D terrain: Artificial intelligence multidimensional mapping for unmanned aircraft systems," *2nd Int. Symp. Intelligent Unmanned Systems on Artificial Intelligence (SIUSAI)*, Aug. 27–29, 2018, *Las Vegas, NV, USA*.

[42] R. Lewis, "Artificial intelligence for Neuro ER: Give him blood, or oxygen, or spinal tap/medication or a craniotomy?," *Military Health System Research Symp. (MHSRS)*, Aug. 20–23, 2018, *Kissimmee, FL, USA*.

[41] R. Lewis and M. Bihn, "Cerebral vasospasm decision support system for neurosurgeons," *Int. Conf. Computational Science and Computational Intelligence (CSCI)*, Dec. 14–16, 2017, *Las Vegas, NV, USA*.

[40] R. Lewis and M. Bihn, "Artificial intelligent agent for autonomous prediction and dynamic feedback for high performance athletes," *Int. Conf. Computational Science and Computational Intelligence (CSCI)*, Dec. 14–16, 2017, *Las Vegas, NV, USA*.

[39] R. Lewis, C. Mello, Y. Zhuang, M. K.-C. Yeh, Y. Yan, and D. Gopstein, "Visually discerning neurological functionality during intense versus trivial thought processes," *13th Int. Symp. Medical Information Processing and Analysis (SIPAIM)*, Oct. 5–7, 2017, *Poster*, *San Andrés Island, Colombia*.

[38] K. Kamalaldin, R. Lewis, C. Mello, D. R. Cserpan, S. Zoltan, P. Erdi, and Z. Borhegyi, "Classifying & localizing epileptic brain states using structural features of neuronal Sugihara causation networks," *Advanced Computational Neuroscience Network Workshop (ACNN)*, Oct. 20–21, 2016, *San Francisco, CA, USA*.

[37] A. Kennedy and R. Lewis, "Optimization of neural network architecture for biomechanic classification tasks with electromyogram inputs," *2nd Int. Conf. Advances in Bioscience and Bioengineering (ICABB)*, Oct. 26–29, 2016, *San Francisco, CA, USA*.

[36] A. Kennedy and R. Lewis, "Optimization of neural network architecture for biomechanic classification tasks with electromyogram inputs," *Int. J. Artificial Intelligence & Applications*, vol. 7, no. 5, pp. 1–16, Sep. 2016, doi: 10.5121/ijaia.2016.7501.

[35] R. Lewis, M. Bihn, and C. Mello, "Machine intelligence: The neuroscience of chordal semantics and its association with emotion constructs and social demographics," *in Proc. Int. Symp. Methodologies for Intelligent Systems (ISMIS)*, Oct. 21–23, 2015, pp. 290–299, doi: 10.1007/978-3-319-25252-0_32, *Lyon, France*.

[34] R. Lewis and R. Broberg, "Seizure and pathologic oscillatory detection by entropy of the discrete amplitude distribution," *in Proc. 7th Int. Conf. Similarity Search and Applications (SISAP)*, 2014, pp. 247–252, *Los Cabos, Mexico*.

[33] 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," *in Proc. Int. Conf. Brain Informatics and Health (BIH)*, Aug. 11–14, 2014, *Warsaw, Poland*.

[32] R. Lewis, "Neuroscience rough set approach for credit analysis of branchless banking," *in Proc. 21st Int. Symp. Methodologies for Intelligent Systems (ISMIS)*, Jun. 25–27, 2014, pp. 536–541, doi: 10.1007/978-3-319-08326-1_57, *Roskilde, Denmark*.

[31] 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, IX Int. Seminar Medical Information Processing and Analysis*, 2013, vol. 8922, Art. no. 89220E, doi: 10.1117/12.2035561, *Mexico City, Mexico*.

[30] R. Lewis, C. Mello, J. Ellenberger, and A. M. White, "Domain adaptation for pathologic oscillations," *in Proc. 14th Int. Conf. Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing (RSFDGrC)*, Oct. 11–14, 2013, pp. 374–379, doi: 10.1007/978-3-642-41218-9_40, *Halifax, NS, Canada*.

[29] R. Lewis, C. Mello, A. Brooks-Kayal, J. Carlsen, H. Grabenstatter, and A. M. White, "Autonomous neuroclustering of pathologic oscillations using discretized centroids," *in Proc. 8th Int. Conf. Mass Data Analysis of Images and Signals with Applications in Medicine (MDA)*, Jul. 13–16, 2013, pp. 12–23, *New York, NY, USA*.

[28] R. Lewis, C. Mello, A. Brooks-Kayal, J. Carlsen, H. Grabenstatter, and A. M. White, "Semi-autonomous neuroclustering: Using centroidal displacement analysis," *in Proc. 9th Int. Conf. Machine Learning and Data Mining (MLDM)*, Jul. 15–20, 2013, *New York, NY, USA*.

[27] 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)*, 2012, *Poster*, *San Diego, CA, USA*.

[26] R. Lewis, C. Mello, and A. M. White, "Tracking epileptogenesis progressions with layered fuzzy K-means and K-medoid clustering," *in Proc. Int. Conf. Computational Science (ICCS), Procedia Computer Science*, Jun. 4–6, 2012, vol. 9, pp. 432–438, *Omaha, NE, USA*.

[25] R. A. Lewis and A. Waziri, "minedICE: A knowledge discovery platform for neurophysiological artificial intelligence," *in Proc. 19th Int. Symp. Methodologies for Intelligent Systems (ISMIS)*, Jun. 28–30, 2011, pp. 575–580, doi: 10.1007/978-3-642-21916-0_61, *Warsaw, Poland*.

[24] R. Lewis, B. Parks, D. Shmueli, and A. M. White, "Detecting epileptogenesis in power variant domains," *Control and Cybernetics*, vol. 40, pp. 293–314, 2011.

[23] R. Lewis and A. M. White, "Multimodal spectral analysis and discrete finite automata for detecting seizures," *in Proc. IEEE/WIC/ACM Int. Conf. Web Intelligence and Intelligent Agent Technology (WI-IAT)*, 2010, vol. 2, pp. 445–448, *Toronto, Canada*.

[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 Proc. IEEE Int. Conf. Granular Computing (GrC)*, Aug. 14–16, 2010, pp. 277–282, *San Jose, CA, USA*.

[21] R. Lewis, B. Parks, D. Shmueli, and A. M. White, "Deterministic finite automata in the detection of epileptogenesis in a noisy domain," *in Proc. Joint Venture of the 18th Int. Conf. Intelligent Information Systems and the 25th Int. Conf. Artificial Intelligence (IIS)*, Jun. 8–10, 2010, pp. 207–218, *Siedlce, Poland*.

[20] X. Zhang, W. Jiang, Z. Raś, and R. Lewis, "Blind music timbre source isolation by multi-resolution comparison of spectrum signatures," *in Proc. 7th Int. Conf. Rough Sets and Current Trends in Computing (RSCTC), Lecture Notes in Artificial Intelligence*, 2010, vol. 6086, pp. 610–619, doi: 10.1007/978-3-642-13529-3_65, *Warsaw, Poland*.

[19] R. Lewis and A. M. White, "Seizure detection using sequential and coincident power spectra with deterministic finite automata," *in Proc. Int. Conf. Bioinformatics and Computational Biology (BIOCOMP)*, Jul. 12–15, 2010, vol. 1, pp. 481–488, *Las Vegas, NV, USA*.

[18] R. Lewis, D. Shmueli, and A. M. White, "Deterministic finite automata in the detection of EEG spikes and seizures," *in Proc. 9th Int. Symp. Intelligent Data Analysis (IDA)*, May 19–21, 2010, pp. 103–113, doi: 10.1007/978-3-642-13062-5_11, *Tucson, AZ, USA*.
[17] T. E. Boult, A. T. Chamillard, R. Lewis, N. Polok, G. Stock, and D. Wortman, "Innovations in university education in innovation: Moving beyond the B.S.," *Int. J. Innovation Science*, vol. 1, no. 4, pp. 167–178, 2010, doi: 10.1260/1757-2223.1.4.167.
[16] R. Lewis, J. Kalita, S. Sarmah, and D. Bhattacharyya, "Music industry scalar analysis using unsupervised Fourier feature selection," *in Recent Advances in Intelligent Information Systems, Proc. Intelligent Information Systems (IIS)*, Jun. 15–18, 2009, pp. 485–494, *Kraków, Poland*.
[15] R. Lewis, A. Cohen, W. Jiang, and Z. Raś, "Mining chordal semantics in a non-tagged music industry database," *in Recent Advances in Intelligent Information Systems, Proc. Intelligent Information Systems (IIS)*, Jun. 15–18, 2009, pp. 473–483, *Kraków, Poland*.
[14] R. Lewis, A. Cohen, W. Jiang, and Z. Raś, "Hierarchical tree for dissemination of polyphonic noise," *in Proc. 6th Int. Conf. Rough Sets and Current Trends in Computing (RSCTC), Lecture Notes in Computer Science*, 2008, vol. 5306, pp. 448–456, doi: 10.1007/978-3-540-88425-5_46, *Akron, OH, USA*.
[13] R. Lewis, W. Jiang, and Z. Raś, "Mining scalar representations in a non-tagged music database," *in Proc. Int. Symp. Methodologies for Intelligent Systems (ISMIS), Foundations of Intelligent Systems*, May 20–23, 2008, pp. 445–454, *Toronto, Canada*.
[12] R. Lewis and Z. Raś, "Facial recognition," *in Encyclopedia of Data Warehousing and Mining, 2nd ed., J. Wang, Ed.*, vol. 2, pp. 857–862, 2008.
[11] R. A. Lewis and A. Wieczorkowska, "Categorization of musical instrument sounds based on numerical parameters," *in Proc. 15th Int. Conf. Conceptual Structures (ICCS), Conceptual Structures: Knowledge Architectures for Smart Applications*, 2007, pp. 87–93, doi: 10.1007/978-1-84628-992-7_12.
[10] R. A. Lewis and A. Wieczorkowska, "Parameter-based categorization for musical instrument retrieval," *in Proc. Int. Conf. Rough Sets and Intelligent Systems Paradigms (RSEISP), Lecture Notes in Computer Science*, Jun. 28–30, 2007, vol. 4585, pp. 784–792, *Warsaw, Poland*.
[9] R. Lewis, X. Zhang, and Z. Raś, "MIRAI: Multi-hierarchical FS-tree based music information retrieval system," *in Proc. Int. Conf. Rough Sets and Intelligent Systems Paradigms (RSEISP)*, Jun. 2007, doi: 10.1007/978-3-540-73451-2_10, *Invited paper*, *Warsaw, Poland*.
[8] R. Lewis and Z. Raś, "Rules for processing and manipulating scalar music theory," *in Proc. Int. Conf. Multimedia and Ubiquitous Engineering (MUE)*, Apr. 26–28, 2007, pp. 819–824, *Seoul, South Korea*.
[7] A. Wieczorkowska, Z. Raś, X. Zhang, and R. Lewis, "Multi-way hierarchic classification of musical instrument sounds," *in Proc. Int. Conf. Multimedia and Ubiquitous Engineering (MUE)*, Apr. 26–28, 2007, pp. 897–902, *Seoul, South Korea*.
[6] R. Lewis, X. Zhang, and Z. Raś, "Blind signal separation of similar pitches and instruments in a noisy polyphonic domain," *in Proc. Int. Symp. Methodologies for Intelligent Systems (ISMIS), Foundations of Intelligent Systems, Lecture Notes in Artificial Intelligence*, Sep. 27–29, 2006, vol. 4203, pp. 228–237, doi: 10.1007/11875604_26, *Bari, Italy*.
[5] R. Lewis, X. Zhang, and Z. Raś, "Knowledge discovery based identification of musical pitches and instruments in polyphonic sounds," *Engineering Applications of Artificial Intelligence*, vol. 20, no. 5, pp. 637–645, Aug. 2007.
[4] A. Wieczorkowska, P. Synak, R. Lewis, and Z. Raś, "Creating reliable database for experiments on extracting emotions from music," *in Intelligent Information Processing and Web Mining, Advances in Soft Computing*, 2005, vol. 31, pp. 395–404, doi: 10.1007/3-540-32392-9_41, *Gdańsk, Poland*.
[3] R. Lewis and Z. Raś, "Innertron: New methodology of facial recognition, Part II," *in Intelligent Information Processing and Web Mining, Proc. Intelligent Information Processing Symp.*, Jun. 13–16, 2005, pp. 625–632, doi: 10.1007/3-540-32392-9_75, *Gdańsk, Poland*.
[2] R. Lewis and Z. Raś, "Innertron: New methodology of facial recognition, Part I," *in Intelligent Information Processing and Web Mining, Proc. Intelligent Information Processing Symp.*, Jun. 13–16, 2005, pp. 1–9, *Gdańsk, Poland*.
[1] A. Wieczorkowska, P. Synak, R. Lewis, and Z. Raś, "Extracting emotions from music data," *in Proc. Int. Symp. Methodologies for Intelligent Systems (ISMIS), Foundations of Intelligent Systems, Lecture Notes in Artificial Intelligence*, May 25–28, 2005, vol. 3488, pp. 456–465, doi: 10.1007/11425274_47, *Saratoga Springs, NY, USA*.

JOURNALS & INVITED PAPERS

Selected journal articles and invited papers from the numbered bibliography above.
[24] Detecting epileptogenesis in power variant domains
[17] Innovations in university education in innovation: Moving beyond the B.S.
[29] Autonomous neuroclustering of pathologic oscillations using discretized centroids
[9] MIRAI: Multi-hierarchical FS-tree based music information retrieval system
[12] Facial recognition
[5] Knowledge discovery based identification of musical pitches and instruments in polyphonic sounds

MANUSCRIPTS PENDING REVIEW

The following submissions are pending and are not included in the published bibliography above. Conference details are as supplied.

[3] R. Lewis, "A developmental neuromorphic metacognitive architecture for independent oversight of artificial intelligence," *64th Design Automation Conf. (DAC)*, Jul. 11–14, 2027, *Pending submission*, *San Jose, CA, USA*.
[2] R. Lewis, "Neuromorphic metacognition for protecting human judgment in human–AI interaction," *ACM Conf. Human Factors in Computing Systems (CHI)*, May 10–14, 2027, *Pending submission*, *Pittsburgh, PA, USA*.

[1] R. Lewis, "Neuromorphic metacognition for human oversight of AI: Formalizing and detecting maladaptive artificial intelligence states," *39th Annual Conf. Innovative Applications of Artificial Intelligence (IAAI)*, Feb. 18–20, 2027, *Pending submission*, *Montréal, Canada*.

SELECTED INTERNATIONAL KEYNOTE ADDRESSES

- *The Convergence of Artificial Intelligence and the Internet of Things*: Palo Alto, CA: Presented DNNs, GPU computing, and artificial consciousness research to an audience including **Eric Schmidt** (see here).
- *BRAININFO*: Sixth International Conference on Neuroscience and Cognitive Brain Information, Nice, France: Delivered a keynote on AI-driven sentience and common-sense reasoning (see here).
- *Second Annual Autonomous Capabilities for DoD Summit*: Keynote speaker and panel moderator. Briefed senior DoD leadership, including two four-star generals, on AI and autonomous military systems (see here).

ADDITIONAL INVITED ADDRESS

- *8th International Conference on Neuroscience and Cognitive Brain Information (BRAININFO)*: Keynote/plenary address, "Embedding Neuroscientific Connectomic Synapsis with a Dynamic Neuron Onto a Solid State Device," International Academy, Research, and Industry Association, Mar. 13–17, 2023, *Barcelona, Spain* (see conference).

INTELLECTUAL PROPERTY

T. E. Boult and R. Lewis, "System and Method for Driver Reaction Impairment Vehicle Exclusion via Systematic Measurement for Assurance of Reaction Time," U.S. Patent Application 12/980,899, USPTO, 2011.

D. SYNERGISTIC ACTIVITIES

Achievements and Honors

- Professor of the Year (Student Body Vote), College of Engineering, UCCS, 2020.
- Professor of the Year (Student Body Vote), College of Engineering, UCCS, 2019.
- Faculty Fellow, Daniels Fund Ethics Initiative Faculty Fellowship, 2019.
- Sabbatical Research Fellow, Classified AI/ML Research with USAF and Pentagon, 2017.
- Professor of the Year (Student Body Vote), College of Engineering, UCCS, 2018.
- AI Systems Architect, Greg LeMond Inc., 2015.
- AI Performance Architect, Team SKY Cycling, 2016.
- AI Analytics Lead, United States Olympic Committee (USOC), 2014.
- Professor of the Year, Department of Computer Science, UCCS, 2012.
- Inventor of the Year, University of Colorado System-Wide Award, 2011.
- Clinical AI Implementation, Department of Neurosurgery, UC Denver Anschutz Medical School, 2010–2016.
- Innovations in Scholarship for Inclusive Excellence (ISIE) Award, UCCS, 2009.
- **Authored Book Series (Apress/Springer):**
  Lewis, R. A., & Mello, C. (2013). iPhone and iPad Apps for Absolute Beginners iOS SDK 6. Apress/Springer.
  Lewis, R. A. (2013). iPhone and iPad Apps for Absolute Beginners, iOS 7 Edition. Apress/Springer.
  Lewis, R. A., McCarthy, Y., & Moraco, S. M. (2012). Beginning iOS Storyboarding. Apress/Springer.
  Lewis, R. A. (2012). iPhone and iPad Apps for Absolute Beginners, iOS 5 Edition. Apress/Springer.
  Lewis, R. A. (2010). iPhone and iPad Apps for Absolute Beginners. Apress/Springer.

Program Committee Memberships

Journals: Journal of Advances in Artificial Intelligence and Machine Learning (AAIML 2023); Journal of Intelligent Information Systems (JIIS 2016, 2013); Engineering Applications of AI (EAAI 2012); Journal of Convergence IT (JCIT 2011); International Journal of Advancements in Computing Technology (IJACT 2010); Journal of Intelligent Systems (ISCFI 2009).
Conferences: ISMIS (2022, 2020, 2018, 2015, 2014, 2009, 2007); LOD (2020); ICDIS (2018); MAICS (2017); IJCRS (2016); BIH (2014); SIPAIM (2013); IDT (2013); IKE (2012); ACIIDS (2010); IEA-AIE (2009); IEEE ICDM-MCD (2008); IIS (2006).

University & Administrative Service

- **Program Director:** Master's Degree Program in Computer Science, UCCS (2010–Present).
- **Task Force Member:** Faculty Rights and Responsibilities / Academic Leaders Roles (PRR), UCCS (2020–2022).
- **Search Committee Chair:** Computer Science Tenure Track (2023, 2022, 2021, 2020); Software Engineering (2021); Cyber Security (2020).
- **Founder & Director:** Space War Preparation Center (SWPC), University of Colorado & DoD (2019–2020).
- **College/Campus Committees:** CRCW (2019); B.A. in Computer Science Committee (2019–2020); EAS Dean Search (2019); Gallogly Chair Search (2019); Library Committee Chair (2008–2015).

Sponsoring & Federal Review Panels

- **National Science Foundation (NSF):** Served on 68 review panels (CISE SBIR/STTR, IIS: SCH).
- **National Institutes of Health (NIH):** Served on 3 review panels (Smart and Connected Health).

- **Department of Defense (DoD):** Served on 2 panels (USAF/WEdge, ISR, Secret clearance level).

Collaborators, Mentors, and Advisees

- **Ph.D. Advisor:** Zbigniew Raś (Prof. Habilitation, Director of KDD Lab, UNC Charlotte).
- **Ph.D. Students Mentored:** Constance Hendrix, David Vadnais, Taniza Sultana, Katrina Nesterenko, Zanyar Zohourianshahzadi, Chad Mello, Chris Hammond, Matt Doman, Michael Bihn, Benjamin Garcia, James Ellenberger.
- **Master's Students Mentored:** Supriya Krishnappa, Helen Huang, Brandon Archuletta, Chad Credeur, Ali Al Shami, Bhakti Mehta, Maadh Hmosze, Gabriel Jordan, Nicholas Johnson, Ashley Whiteside, David Stites, Devon Bryant, Daniel Ruiz, Colton Williams, Kelly McMurtrey.
- **Key Collaborators:** T. Boult (UCCS), A. Wieczorkowska (PJAIT), A. Waziri (Anschutz), A. Brooks-Kayal (Anschutz), A. M. White (Denver Health), A. Skowron (Warsaw), P. Erdi (HAS), G. Bloom (UCCS), J. Kalita (UCCS), K. Walcott (UCCS), Y. Zhuang (UCCS), D. Gopstein (NYU), Z. Borhegyi (HAS).

E. RESEARCH SUPPORT

Pending Research Support

- **Principal Investigator, "Neuromorphic Metacognition:** A Brain-Inspired Architecture for Independent Oversight of Artificial Intelligence," National Science Foundation (NSF), Future CoRe / FET, $680,000 (2026–2029).
- **Principal Investigator, "AI-Infrastructure-Hubs:** Colorado AI Infrastructure Hub for Scientific Discovery, Education, and Workforce Development," National Science Foundation (NSF 26-513), $890,000 (2027–2032).

Current Research Support

- **Principal Investigator (Co-PI:** T. Boult), "Multivariate Algorithms for Optimized Test Heuristics and Real-Time Analysis (MAOTHRA)," Test Resource Management Center (TRMC) / MSCI, $2,675,250 total:
  I. Prototyping: $297,250. Real-time test optimization heuristics for C4I software-intensive systems.
  II. Initial Field Testing: $297,250. Live operational test environment at Redstone Arsenal.
  III. Final Field Testing and Transition Readiness: $297,250. Redstone Arsenal transition readiness.

Completed Research Support & Sponsored Projects

- **Co-Principal Investigator (PI:** M. Quinlan), "Acquisition of a High-Speed Imaging and Laser Diagnostic Facility for Multi-Use Research," NSF 103834, $1,252,159.
- **Principal Investigator, "EFRI BRAID:** Ultra-Low-Power Self-Learning Model Using a Synaptic-Based Connectomic Neuromorphic Morphology," NIH, $1,608,138.
- Principal Investigator, "An Intelligent Computational Neuroscience Infrastructure," NSF, $3,412,658.
- **Co-Principal Investigator (PI:** T. Boult, Co-PI: C. Benight), "Collaborative Research: EASE Modeling for Adaptive Web-Empowerment PTSD Trauma Treatment," NSF, $1,803,590.
- **Co-Principal Investigator, "REU Site:** Research Experiences for Undergraduates," NSF, $375,905.
- Principal Investigator, "Artificial Intelligence for Long Distance Elite-Level Females," USOC, $70,000.
- Principal Investigator, "Online Support Network for Users with Dependencies," NSF STTR, $150,000.
- Principal Investigator, "Innovations in Scholarship for Inclusive Excellence (ISIE)," UCCS, $10,000.
- **Co-Principal Investigator (PI:** A. Ketsdever), "Model-Based Simulation for System of Systems Engineering," AMRDEC/MDA, $94,409.

F. TEACHING

Courses Taught at UCCS

CS 4420 / CS 5420	Database Systems
CS 3060	Object-Oriented Programming with C++
CS 1450	Data Structures
CS 1150	Java, Principles of Computer Science
CS 5450	KDD Applications in Neuroscience
CS 5060	Selected Topics in Biometrics
INOV 1010	Bachelor of Innovation Lab
INOV 2100	Technical Writing, Proposals and Presentations
BLAW 2010	Business and Intellectual Property Law
CS 2010	iPhone iOS: Objective-C
CSCI 4802 / 5802	iPhone and iPad Programming (UC Denver)

Subject Areas Taught

Computer Science
Database Systems & Security
Data Structures & Algorithms

MBA & Management
Database Essentials for Decision Making
Managing Information Technology

Object-Oriented Programming (C++, Java, C#)
Fuzzy & Rough Set Data Mining
KDD in Neuroscience & AI Ethics
Networking Concepts & Web Systems
Information Security Law
Strategic Management of Technology
Principles of Information Security & Privacy
Systems Analysis, Planning & Control

G. PROFESSIONAL MEMBERSHIPS

- **Association for Computing Machinery (ACM):** Senior Member (October 2011–Present). SIGs: Life/Medical Sciences, AI, Discrete Mathematics/Logic, and Artificial Consciousness.
- **Institute of Electrical and Electronics Engineers (IEEE):** Senior Member. Societies: IEEE Computer Society, IEEE Computational Intelligence Society, IEEE Robotics and Automation Society.

H. PROFESSIONAL EXPERIENCE

- **ENVEL Bank:** Advisory Board Member and Director of Artificial Intelligence (2019–2022).
- **Space War Preparation Center (SWPC):** Director, Harris Corp., DoD & CU Regents (2019–2020).
- **RAND Corporation:** Researcher and Advisor, Scientific and Legal Parameters of DoD AI/ML (2017–2020).
- **Warfighters Edge Research Laboratories:** Fellow, Classified AI/ML Research for USAF/Pentagon (2017–2021).
- **Holland & Hart LLP:** Statistical-Legal Analyst with Charles R. Lucy Esq. (2009–2012).
- **Pulte (Fortune 500):** Senior Executive Consultant, Enterprise C++/Java/ASP systems (1999–2000).
- **Global Crossing (Fortune 500):** Senior Government Liaison, Technology transfer protocols (1999).
- **Baikowski:** Private Executive Contractor, VLSI fabrication slurry IP litigation valuation (1999).
- **Dougherty & Dremann LLP:** Associate, Tech IP, VLSI/Software patent prosecution (1997–1999).
- **Skjerven Morrill MacPherson Friel LLP:** Legal Counsel, AMD v. Intel microprocessor litigation (1995–1997).
- **Fulbright & Jaworski LLP (now Norton Rose Fulbright):** Legal Counsel, Microprocessor IP (1994–1995).

I. CONNECTIONS AND PARTNERSHIPS

- EarthX, Dallas, TX (July 2020–Present).
- Peak Producers of Colorado Springs, Colorado Springs, CO (2021, 2022).
- Patty Jewett Business Group, Colorado Springs, CO (2020, 2021).
- Colorado Springs Chamber of Commerce & EDC, Colorado Springs, CO (2019).
- Space War Preparation Center Sponsorship Initiatives, Colorado Springs, CO (2019).