

BING ZHOU
Department of Computer Science
Sam Houston State University
2023-2024

ACADEMIC APPOINTMENT

2018 – present, Associate Professor, Department of Computer Science, Sam Houston State University (SHSU)

2012 - 2018. Assistant Professor, Department of Computer Science, Sam Houston State University (SHSU)

2006 - 2012, Research Assistant, Department of Computer Science, University of Regina, Canada

RESEARCH INTERESTS

Cyber Security, Database Security, Digital Forensics

Analyzing and mining uncertain and probabilistic data for big data analytics Rough sets, fuzzy sets, granular computing

Data mining, cost-sensitive learning

EDUCATION

Ph.D. in Computer Science, University of Regina, Canada, July 2012

Dissertation: “A Cost-Sensitive Approach to Ternary Classification”

M.S. in Computer Science, University of Regina, Canada, August 2008

B.S. in Computer Science, Shandong University of Technology, China, July 1998

TEACHING

(Taught 20 different courses (70+ classes in total) at SHSU)

COSC 1436 Programming Fundamentals I (Fall 2012, Spring & Fall 2013)

COSC 3318 Database Management Systems (Fall 2012, Fall 2013, Spring & Fall 2014, Spring & Fall 2015, Spring & Fall 2016, Spring & Fall 2017, Spring 2018, Spring & Fall 2019, Spring 2020)

COSC 3331 Human Computer Interaction (Spring 2013, Spring 2014, Spring & Fall 2015, Spring 2016, 2017, 2018, 2019, 2020, 2021)

DFSC 3337 Information System Design and Management (Spring 2014, 2015, 2017, 2018, Fall 2022)

COSC/DFSC 4050 Independent Study (Fall 2020, Spring & Fall 2021, Spring & Fall 2022)

COSC 5302 Computer Science Core Topics (Fall 2018, Spring & Fall 2021, Fall 2022)

DFSC 5340	Database Forensics (Summer 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020)
DFSC 5316	File System Forensics (Spring 2020)
COSC 5318	Database Systems (Fall 2014, 2015, 2016, 2017)
DFSC 5325	Organization System Security (Fall 2019)
DFSC 5328	Software Forensic Evidence Mgt (Summer 2020) COSC/DFSC
6347	Programming Practicum (Spring & Fall 2019, Spring & Summer 2020)
COSC 6348	Thesis (Spring 2019)
COSC 6049	Thesis (Spring 2019)
DFSC 6410	Cyber Forensics Principles (Fall 2018, 2019, 2020, 2021)
DFSC 7360	DF Research Methods (Spring 2021, 2022)
DFSC 7362	Computational Forensics (Fall 2019)
DFSC 7320	Ethics for Digital Forensics (Spring 2023)

PEER-REVIEWED PUBLICATIONS

(62 publications in total – 17 journal articles, 3 book chapters, 42 conference proceedings;

*denotes students advised)

Journal Papers

1. *A Ceballos Delgado, **B Zhou**. Android App Antiforensics. Journal of Surveillance, Security and Safety, 3 (1), 3-15, 2022.
2. *Khushi Gupta, C Varol, **B Zhou**. Digital Forensic Analysis of Discord on Google Chrome. Forensic Science International: Digital Investigation. 2022. (**SCI-indexed, Impact Factor: 2.8**)
3. *Weeks, D., **Zhou, B**. Physical Security Design of a Digital Forensic Lab. Int. J. of Electronic Security and Digital Forensics, 13(4), pp. 418-444, 2021. (**SCI- indexed, Impact Factor: 0.88**)
4. Li, W., Jia, X.Y., Wang, L., **Zhou, B**. Multi-objective attribute reduction in three-way decision-theoretic rough set model. International Journal of Approximate Reasoning. 2019. (**SCI- indexed, Impact Factor: 1.766**)
5. *Krishnan, S., **Zhou, B.**, An, MK. Smartphone Forensic Challenges. International Journal of Computer Science and Security 13 (5), 183 – 200. 2019.
6. Yu, H. **Zhou, B**. Deng, M. Hu, F. Tag recommendation method in folksonomy based on user tagging status. Journal of Intelligent Information Systems. DOI 10.1007/s10844- 017-0468-1. 2018. (**SCI- indexed, Impact Factor: 1.294**)
7. **Zhou, B.**, He, Y. Fast circle detection using spatial decomposition of Hough transform. International Journal of Pattern Recognition and Artificial Intelligence. DOI:10.1142/S0218001417550060. 2017. (**SCI- indexed, Impact Factor: 1.24**)
8. *Leung, F. **Zhou, B**. Performance evaluation of Twitter datasets on SQL and NoSQL DBMS. Web Intelligence. 14(4): 275-286, 2016. (**SCI- indexed**)
9. *Byrd, B., **Zhou, B.**, Liu, Q. Android System Partition to Traffic Data? International Journal of Knowledge Engineering, 2016.
10. Yao, Y.Y., **Zhou, B**. Two Bayesian approaches to rough sets. European Journal of Operational Research. 251(3): 904-917, 2016. (**SCI- indexed, Impact Factor: 2.358**)
11. Jia, X.Y., Shang, L., **Zhou, B**. and Yao, Y.Y. Generalized attribute reduct in rough set theory.

Knowledge-Based Systems. 91: 204-218, 2016. (*SCI-indexed, Impact Factor: 2.947*)

12. **Zhou, B.** Yao, Y.Y. and Luo, J.G. Cost-sensitive three-way email spam filtering. Journal of Intelligent Information Systems. 42(1): 19-45, 2014. (*SCI-indexed, Impact Factor: 1.294*)
13. **Zhou, B.** Multi-class decision-theoretic rough sets. International Journal of Approximate Reasoning. 55(1): 211-224, 2014. (*SCI-indexed, Impact Factor: 2.696*)
14. Zhang, X., **Zhou, B.**, Li, P. A general frame for intuitionistic fuzzy rough sets. Information Sciences. 216: 34-49, 2012. (*SCI-indexed, Impact Factor: 3.683*)
15. **Zhou, B.**, Yao, Y.Y. In search of effective granulization with DTRS for ternary classification. The International Journal of Cognitive Informatics & Natural Intelligence (IJCiNi). Volume 5, Issue 3, 47-60. 2011.
16. **Zhou, B.**, Yao, Y.Y. Evaluating information retrieval system performance based on user preference. Journal of Intelligent Information Systems. Volume 34, Issue 3, 227-248. 2010. (*SCI-indexed, Impact Factor: 1.294*)
17. **Zhou, B.**, Yao, Y.Y. A logic approach to granular computing. The International Journal of Cognitive Informatics & Natural Intelligence (IJCiNi). Vol 2, No. 2. pp. 63-79. 2008.

Selected Conference Papers

18. *C Ratcliffe, *BG Bokolo, *D Oladimeji, **B Zhou**. Detection of Anti-forensics and Malware Applications in Volatile Memory Acquisition. International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE). 516-527. 2022.
19. *Khushi Gupta, *Razaq Jinad, **B Zhou**. Applying Rough Set Theory for Digital Forensics Evidence Analysis. International Joint Conference on Rough Sets (IJCRS). 71-84. 2022.
20. *Damilola Oladimeji, **B Zhou**. Forensic Analysis of Amazon Alexa Echo Dot 4th Generation. IEEE International Conference on Big Data. 2022.
21. *S Zavala, N Shashidhar, C Varol, **B Zhou**. Disaster Recovery Management with PowerShell PSDRM. SAIS 2022 PROCEEDINGS. 2022.
22. *C Ihekweazu, LJ Lester, **B Zhou**. Adopting the DFORS-quiz app on Mobile Systems for Learning in Education with a focus on Digital Forensics. Proceedings of the EDSIG Conference ISSN 2473, 4901. 2022.
23. *Olajide Salawu, **Zhou, B.**, and Qingzhong Liu. Predicting the Progression in Interstitial Lung Disease Using Computer Tomographic Scans with Transfer Learning. The 17th Int. Conference on Data Science (ICDATA'21), 2021.
24. *Todd Mason, **Zhou, B.** Digital Forensics Process of an Attack Vector in ICS Environment. IEEE International Conference on Big Data, pp. 2532-2541, 2021.
25. *S Krishnan, **Zhou, B.** Predicting Crime Scene Location Details for First Responders. 2020 8th International Symposium on Digital Forensics and Security (ISDFS), pp. 1-7, 2020.
26. *S Ozcan, M Astekin, N Shashidhar, and **Zhou, B.**, Centrality and Scalability Analysis on Distributed Graph of Large-Scale E-mail Dataset for Digital Forensics. IEEE International Conference on Big Data. 2020.
27. *Hutchinson, S., **Zhou, B.**, Karabiyik, U. Are We Really Protected? An Investigation into the Play Protect Service. 2019 IEEE International Conference on Big Data (Big Data). pp. 4997-5004. 2019.
28. *Neyaz, A., **Zhou, B.**, Shashidhar, N. Comparative Study of Wear-leveling in Solid-State Drive with NTFS File System. 2019 IEEE International Conference on Big Data (Big Data). pp. 4294-4298. 2019.

29. An, M., Cho, H., **Zhou, B.**, Chen, L. Minimum Latency Aggregation Scheduling in Internet of Things. International Conference on Computing, Networking and Communications. 2019.
30. **Zhou, B.**, Cho, H., *Zhang, X. Scalable Implementations of Rough Set Algorithms: A Survey. International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, pp. 848-660, 2018.
31. *Aydogan, A., **Zhou, B.** Improving Database Security with Pixel-based Granular Encryption. 2018 IEEE International Conference on Big Data. 2018.
32. **Zhou, B.** Cho, H. *Mansfield, A. Robust Sensor Data Fusion through Adaptive Threshold Learning. International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, pp. 277-282. 2017.
33. Sablatura, J., **Zhou, B.** Forensic database reconstruction. 2017 IEEE International Conference on Big Data, pp. 3700-3704, 2017.
34. Yu, H. Chang, Z. **Zhou, B.** A Novel Three-way Clustering Algorithm for Mixed-type Data. The 8th IEEE International Conference on Big Knowledge, pp. 119-126. 2017.
35. Wang, L. Li, W. Jia, X.Y. **Zhou, B.** A Multi-Objective Attribute Reduction Method in Decision-Theoretic Rough Set Model. The 10th International Conference on Knowledge Science, Engineering and Management, pp. 117-128. 2017.
36. Yu, H. Jin, L. **Zhou, B.** Xiao, B. Zeng, X. An event-based approach to overlapping community evolution by three-way decisions. IEEE 2nd International Conference on Big Data Analysis (ICBDA), pp. 772-778. 2017.
37. **Zhou, B.**, Yao, Y.Y., Liu, Q. Utilizing DTRS for imbalanced text classification. The 2016 International Joint Conference on Rough Sets (IJCRS 2016). 219-228, 2016. **(Best Paper Award)**
38. *Karuparthi, R. **Zhou, B.** Enhanced Approach to Detection of SQL Injection Attack. The IEEE 15th International Conference on Machine Learning and Applications (ICMLA 2016). 2016.
39. Liu, Q., Sung, A., **Zhou, B.**, Qiao, M. Exposing inpainting forgery in JPEG images under recompression attacks. IEEE 15th International Conference on Machine Learning and Applications (ICMLA 2016). 2016.
40. *Uduthalapally, P., **Zhou, B.** Improvement of ETSFS algorithm for secure database. The 4th International Symposium on Digital Forensics and Security (ISDFS 2016), pp. 63-67. 2016.
41. *Byrd, B., **Zhou, B.**, and Liu, Q.Z. Android system partition to traffic data? International Conference on Information and Knowledge Management, 2016.
42. *Li, Q., **Zhou, B.**, and Liu, Q.Z. Can Twitter posts predict stock behavior? - A study of stock market with Twitter social emotion. The 2016 IEEE International Conference on Cloud Computing and Big Data Analysis, pp. 359-364, 2016.
43. **Zhou, B.** Using Vector Quantization of Hough Transform for Circle Detection. The 14th IEEE International Conference on Machine Learning and Applications (ICMLA 2015). 2015.
44. **Zhou, B.**, Yao, Y.Y. Decision-Level Sensor-Fusion based on DTRS. The 2015 International Joint Conference on Rough Sets (IJCRS 2015), pp. 321-332. 2015. **(Best Paper Award)**
45. **Zhou, B.**, Yao, Y.Y. Feature Selection Based on Confirmation-Theoretic Rough Sets. The 9th International Conference of Rough Sets and Current Trends in Computing (RSCTC 2014). Lecture Notes in Computer Science 8536, pp. 181-188. 2014.
46. *Metzger, M., **Zhou, B.** The Role of Database Forensics in Cyberspace Law Enforcement.

In the proceedings of The Second International Symposium on Digital Forensics and Security (ISDFS 2014). 2014.

47. *Nevarez, N., **Zhou, B.** SQL Injection: Hardening MYSQL. In the proceedings of The Second International Symposium on Digital Forensics and Security (ISDFS 2014). 2014.
48. **Zhou, B.** Yao, Y.Y. Comparison of Two Models of Probabilistic Rough Sets. The 8th International Conference on Rough Sets and Knowledge Technology (RSKT 2013). LNAI 8171, pp. 121-132. 2013.
49. **Zhou, B.** Applying rough set theory to information retrieval. The 26th IEEE Canadian Conference of Electrical and Computer Engineering (CCECE 2013). 2013.
50. Liu, Q., Cooper, P., **Zhou, B.** An improved approach to detecting content-aware scaling- based tampering in JPEG images. China Summit and International Conference on Signal and Information Processing (ChinaSIP 2013), pp. 432-436, 2013.
51. **Zhou, B.**, Liu, Q. A Comparison Study of Cost-Sensitive Classifier Evaluations. International Conference on Brain Informatics, pp. 360-371, 2012.
52. **Zhou, B.** A New Formulation of Multi-Category Decision-Theoretic Rough Sets. The 6th International Conference on Rough Sets and Knowledge Technology (RSKT 2011). 514-522. 2011.
53. **Zhou, B.**, Yao, Y.Y. In search for effective granularity with DTRS. IEEE International Conference on Cognitive Informatics. 464-470, 2010.
54. **Zhou, B.**, Yao, Y.Y., Luo, J.G. A Three-Way Decision Approach to Email Spam Filtering. Canadian Conference on Artificial Intelligence. 28-39, 2010.
55. **Zhou, B.**, Yao, Y.Y. Naive Bayesian Rough Sets. The 5th International Conference on Rough Sets and Knowledge Technology (RSKT 2010). 719-726, 2010.
56. **Zhou, B.**, Yao, Y. Y. Micro and macro evaluation of classification rules. IEEE International Conference on Cognitive Informatics. 441-448, 2008.
57. **Zhou, B.**, Yao, Y.Y. Evaluating Information Retrieval System Performance Based on Multi-Grade Relevance. International Symposium on Methodologies for Intelligent Systems (ISMIS). 424-433, 2008.
58. Yao, Y.Y., **Zhou, B.** A Logic Language of Granular Computing. IEEE International Conference on Cognitive Informatics. 178-185, 2007.
59. Yao, Y.Y., **Zhou, B.**, Chen, Y.H. Interpreting Low and High Order Rules: A Granular Computing Approach. Rough Sets and Intelligent Systems Paradigms (RSEISP). 371- 380, 2007.

Book Chapters

60. **Zhou, B.** Chen, L. and Jia, X.Y. Information Retrieval Using Rough Set Approximations. ICTs and the Millennium Development Goals - A United Nations Perspective (editors: Harleen Kaur and Xiaohui, Tao), 2013.
61. Chen, L. Varol, C. Liu, Q. and **Zhou, B.** Security in Wireless Metropolitan Area Networks: WiMAX and LTE. Security, Privacy, Trust, and Resource Management in Mobile and Wireless Communications (editors: Danda B. Rawat, Bhed B. Bista, and Gongjun Yan). 2013.
62. **Zhou, B.**, Yao, Y.Y. Unifying rough set analysis and formal concept analysis based on a logic approach to granular computing. Discoveries and Breakthroughs in Cognitive Informatics and Natural Intelligence, pp. 325-349. 2009.

GRANTS AND PROPOSALS

(Total funding awarded by 2022: ~ \$4.0M)

Awarded Grants

1. NSF SFS: Developing Interdisciplinary Cybersecurity and Cyber Forensics Education at SHSU, 2022, PI, \$2.8M.
2. THECB Accelerating Credentials of Purpose and Value Planning Grant, 2022, SHSU PI, \$50,000 (SHSU subaward ~ \$15,000).
3. NSF & NSA GenCyber Capacity-Building @ Sam Houston State University, 2022, Co-PI, \$99,669.
4. THECB Accelerating Credentials of Purpose and Value Grant Program with Texas State University, 2022, SHSU PI, \$1.45M (SHSU subaward ~ \$520,000).
5. THECB Accelerating Credentials of Purpose and Value Grant Program, 2022, PI, \$334,723.
6. Engaging Spaces Application to Develop an Active Learning Space. Engaging Space (SHSU), 2021, PI, \$150,000.
7. Applying Soft Computing to Digital Forensic Evidence Analysis. The Pilot Studies for Future Funding Program 2020 from Office of Research Administration (SHSU), 2020, PI, \$15,000.
8. Enhancement of ABET CAC Criteria on Program Educational Objectives and Continuous Improvement. Office of Academic Planning and Assessment, 2020, PI, \$1000.
9. Active Learning Space: Acquiring skills in working with others via team-building exercises. STEM CENTER Teaching Enhancement Grants (SHSU), 2020, PI, \$1700.
10. Enhancing Computer Science and Digital Forensics Education by Integrating Lecture Directed and Project-based Learning in Mobile Computing and Forensics. Teaching Innovation Grants (TIG) from Professional & Academic Center for Excellence (SHSU), 2019, Co-PI, \$13000.
11. Efficient Data Aggregation in Internet of Things. Faculty and Student Team (FAST) Awards from Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU), 2018, Co-PI, \$8,000.
12. Development of a Capstone Project Course in the Computer Science Department. Teaching Innovation Grants (TIG) from Professional & Academic Center for Excellence (SHSU), 2017, PI, \$6235.
13. Robust Sensor Data Fusion through Adaptive Threshold Learning, Enhancement Research Grant (ERG) from Office of Research Administration (SHSU), 2016, PI, \$15000.
14. Detecting Automated SQL Injection Attempts Using Log Manager, Faculty and Student Team (FAST) Awards from Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU), 2016, PI, \$10,000.

Pending Grant Proposals

1. US Army Research Office: Hardware-Based IDS and Threat Mitigation System for Suas, Co-PI, 2022, \$550,167.
2. NSF: Center for Community Coordination (CCC) in Engineering, Science, Technology, and Mathematics (ESTEMA)- a NSF HSI Community Coordination Center, Co-PI, 2022, \$717,494.

Submitted Research Proposals

1. DoD: Proposal for DoD CySP Recruitment Program, 2022, Co-PI, \$511,954.
2. NSA: Cybersecurity Cooperative Education Programs in the Public Sector (University of Washington - prime), SHSU PI, 2022, \$87,861.

3. NSA: NCAE-C Careers Preparation National Center (University of Albany – prime, SHSU PI, 2022, \$193,108
4. NIJ: Developing Advanced Intelligent Systems to Reveal DeepFakes, Co-PI, 2022, \$824,524.
5. NSF RET Site: RET-CCT at SHSU (Research Experiences for Teachers in Computer Science, Cybersecurity, and Technology), 2021, PI, \$593,256.
6. TWC: Drone Pilot @ Sam Houston State University, 2021, Co-PI, \$49,822.
7. NSF FAI: Developing Adaptive and Robust Intelligent Systems to Expose Deepfakes under Adversarial Attacks and Anti-Forensics Manipulations, 2021, Co-PI, \$851,086.
8. Computer Science ABET Assessment Day. Office of Academic Planning and Assessment, 2021, Co-PI, \$1000.
9. TWC: DR@SHSU, 2021, Co-PI, \$615,519.
10. NSF ADVANCE: Identifying Career Advancement Barriers for Women and Minority STEM Faculty at SHSU, 2020, PI, \$299,277.
11. Texas Workforce Commission: Camp Code: Computer Programming for Middle School Summer Camps, 2020, Co-PI, \$99,669.
12. NSF RET Site: RET-CCT at SHSU (Research Experiences for Teachers in Computer Science, Cybersecurity, and Technology), 2020, Co-PI, \$596,501.
13. NSF ADVANCE: Identifying Career Advancement Barriers for Women and Minority STEM Faculty at SHSU, 2019, PI, \$288,000.
14. Texas Workforce Commission: BUILD IT: Building Unconventional Innovative Leadership Development in Information Technology, 2019, Co-PI, \$97,598.
15. Applying Active Learning to Undergraduate Computer Science Major Courses. Teaching Innovation Grants (TIG) from Professional & Academic Center for Excellence (SHSU), 2019, PI, \$13000.
16. Enhancing Computer Science and Digital Forensics Education by Integrating Lecture- Directed and Project-Based Learning in Mobile Intelligent Computing and Forensics. The Spencer Foundation. 2019. Co-PI, \$50,000.
17. Digital Forensics as Applies to 3D Printing. Proposal submitted to Summer 2020 Faculty and Student Team (FAST) Awards. Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU). 2019. PI, \$8,000.
18. Digital Forensics as Applies to 3D Printing, Proposal submitted to Individual Scholarship Program 2019, Office of Research Administration (SHSU), PI, \$5000.
19. SQLite Forensics for Mobile Smart Devices, Proposal submitted to Summer 2019 Faculty and Student Team (FAST) Awards, Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU), PI, \$8000.
20. Decision Making in Computer Games Using Spiking Neural Network, Faculty Research Grant (FRG) from Office of Research Administration (SHSU), 2018. PI, \$5000.
21. SaTC: EDU: Improving and Enhancing Digital Forensics and Cybersecurity Education with Intelligent Computing by Integrating Lecture Directed and Project-based Learning Together, NSF, 2017. Senior personnel, \$300,000.
22. Efficient Data Collection for Military Surveillance Wireless Networks, Faculty and Student Team (FAST) Awards from Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU), 2017, Co-PI, \$8,000, submitted.
23. Improved Supervised Learning for Fraud Detection, Faculty Research Grant (FRG) from Office of Research Administration (SHSU), 2017, PI, \$5000, submitted.
24. American Fellowship Publication Grant, American Association of University Women (AAUW), PI, \$6,000, 2016, submitted.
25. Improving Steganography Technique with Fast Circle, Faculty Research Grant (FRG) from Office of Research Administration (SHSU), 2015, PI, \$5000, submitted.

26. Cost-Sensitive Three-Way Email Spam Filtering (revised), Faculty Research Grant (FRG) from Office of Research Administration (SHSU), 2014, PI, \$5000, submitted.
27. Cost-Sensitive Three-Way Email Spam Filtering, Faculty Research Grant (FRG) from Office of Research Administration (SHSU), 2013, PI, \$5000, submitted.

AWARDS/HONORS

- Best Paper Award: 2016 International Joint Conference on Rough Sets (IJCRS).
- Faculty and Student Team (FAST) Awards from Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU), Summer 2018
- Faculty and Student Team (FAST) Awards from: Center for Enhancing Undergraduate Research Experiences and Creative Activities (EURECA, SHSU). Summer 2016.
- Best Paper Award: 2015 International Joint Conference on Rough Sets (IJCRS: RSKT - RSFDGrC).
- Four of my journal articles are recognized as the **top 1% highly cited** papers by Web of Science:
 - Zhou, B. Multi-class decision-theoretic rough sets. *International Journal of Approximate Reasoning*. 55(1): 211-224, 2014.
 - Zhang, X., Zhou, B., Li, P. A general frame for intuitionistic fuzzy rough sets. *Information Sciences*. 216: 34-49, 2012.
 - Yao, Y.Y., Zhou, B. Two Bayesian approaches to rough sets. *European Journal of Operational Research*. 251(3): 904-917, 2016.
 - Jia, X.Y., Shang, L., Zhou, B. and Yao, Y.Y. Generalized attribute reduct in rough set theory. *Knowledge-Based Systems*. 91: 204-218, 2016.
- Alexander Graham Bell Canada Graduate Scholarships - Doctoral Program (CGS D: \$35,000 a year for three years).

SELECTED CONFERENCE/INVITED TALKS

1. Detection of Anti-forensics and Malware Applications in Volatile Memory Acquisition. International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE). July 19 – 22, 2022. Virtual presentation.
2. Applying Rough Set Theory for Digital Forensics Evidence Analysis. International Joint Conference on Rough Sets (IJCRS). November 11-14, 2022. Virtual presentation.
3. Forensic Analysis of Amazon Alexa Echo Dot 4th Generation. IEEE International Conference on Big Data. December 17-20, 2022. Virtual presentation.
4. Digital Forensics Process of an Attack Vector in ICS Environment. IEEE International Conference on Big Data. IEEE International Conference on Big Data. 2021, December 14-17. Virtual presentation.
5. Comparative Study of Wear-leveling in Solid-State Drive with NTFS File System. IEEE Bigdata 2019, Los Angeles, December 2019.
6. Scalable Implementations of Rough Set Algorithms: A Survey. International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, Montreal, Canada, June 2018.
7. Forensic Lab Management. Zhejiang Police College. Hangzhou, China. October 2018.
8. Improving Database Security with Pixel-based Granular Encryption, IEEE Bigdata 2018, Seattle, December 2018.
9. Forensic database reconstruction., IEEE Bigdata 2017, Boston, December 2017.

10. Generalizations and Applications of Decision-Theoretic Rough Set Model (DTRS). Forum on Big Data Intelligent Computing. Chongqing, China, May 2017.
11. Utilizing DTRS for imbalanced text classification. The 2016 International Joint Conference on Rough Sets (IJCRS2016). Santiago, Chile, October 2016.
12. Using Vector Quantization of Hough Transform for Circle Detection. The 14th International Conference on Machine Learning and Applications (ICMLA'15). Miami, Florida, USA, December 2015.
13. Decision-Level Sensor-Fusion based on DTRS. The 2015 International Joint Conference on Rough Sets (IJCRS'2015). Tianjin, China, November 2015.
14. Feature Selection Based on Confirmation-Theoretic Rough Sets, The 2014 Joint Rough Set Symposium (JRS2014), Madrid, Spain, July 2014.
15. The Role of Database Forensics in Cyberspace Law Enforcement. The Second International Symposium on Digital Forensics and Security (ISDFS 2014). The woodlands, USA, May 2014.
16. SQL Injection: Hardening MYSQL. The Second International Symposium on Digital Forensics and Security (ISDFS 2014). The woodlands, USA, May 2014.
17. Applying rough set theory to information retrieval, The 26th IEEE Canadian Conference of Electrical and Computer Engineering (CCECE'13), Regina, Canada. May 2013.
18. Comparison of Two Models of Probabilistic Rough Sets, A joint conference of the 14th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC13) and the Eighth International Conference on Rough Sets and Knowledge Technology (RSKT2013), Halifax, Canada. October 2013.
19. A Comparison Study of Cost-Sensitive Classifier Evaluations. The 2012 International Conference on Brain Informatics. Macau, China, Dec 4-7, 2012.
20. A three-way decision approach to email spam filtering. The Canadian Conference on Artificial Intelligence. Ottawa, Ontario, Canada. May 2010.
21. Micro and macro evaluation of classification rules. The 7th IEEE International Conference on Cognitive Informatics. Stanford University, USA. August 2008.
22. Evaluating information retrieval system performance based on multi-grade relevance. International Symposium on Methodologies for Intelligent Systems (ISMIS). Toronto Canada. May 2008.

PROFESSIONAL SERVICE

Conference Chairs

- Publication Chair of the 2022 International Joint Conference on Rough Sets (IJCRS)
- Publicity Chair in Web Intelligence 2018.
- IEA/AIE 2018 best papers award committee.

Workshop Chairs

- Workshop/Special session co-chair of 2021 International Conference on Cognitive analytics, Granular computing, and Three-way decisions (CCGT) collocated with International Conference on Belief Functions October 23-25, 2021. Shanghai, China.
- Workshop co-chair of the Granular Computing, Intelligent Decision and Three-Way Decision.

The 17th IEEE International Conference on Networking, Sensing and Control March 7-10, 2020, Nanjing, China.

- Workshop co-chair of the 7th International Workshop on Three-way Decisions, Uncertainty, and Granular Computing (TWDUG'2019). June 17-21, 2019. Debrecen, Hungary.
- Workshop co-chair of The Fifth International Workshop on Three-way Decisions, Uncertainty, and Granular Computing (TWDUG'2017). July 3-7, 2017. Olsztyn, Poland.
- Workshop co-chair of The Fourth International Workshop on Three-way Decisions, Uncertainty, and Granular Computing (TWDUG'2016). October 7-9, 2016. Universidad Catolica del Norte, Antofagasta, Chile.
- Workshop co-chair of the Third International Workshop on Three-way Decisions, Uncertainty, and Granular Computing (TWDUG) in the 2015 international Joint Conference on Rough Sets (IJCRS 2015), November 20-23, 2015, Tianjin, China.
- Special session chair of the 2014 Joint Rough Set Symposium (JRS2014), Madrid, Spain, July 10-13, 2014.
- Special session co-chair in the 8th International Conference on Rough Sets and Knowledge Technology (RSKT 2013). Halifax, Canada. October 11-14. 2013.
- Workshop Organizer of the 7th Multi-Disciplinary Workshop on Artificial Intelligence (MIWAI 2013), Krabi, Thailand, December 10-11, 2013.

External Examiner of PhD Thesis

- Three-way Clustering Approaches to Open World Classification and Overlapping Regions, National University of Computer and Emerging Sciences, Islamabad, Pakistan. Spring 2021.
- Investigating Clustering of Uncertain Data with Three-way Approaches, National University of Computer and Emerging Sciences, Islamabad, Pakistan. Summer 2019.

PC Members

- Program Committee Member of the The Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD) 2023.
- Program Committee Member of the 35th AAAI Conference on Artificial Intelligence (AAAI 2022).
- Program Committee Member of the 29th International Joint Conference on Artificial Intelligence (IJCAI 2022).
- Program Committee Member of the International Joint Conference On Rough Sets, 2022.
- Program Committee Member of the 35th AAAI Conference on Artificial Intelligence (AAAI 2021).
- Program Committee Member of the 29th International Joint Conference on Artificial Intelligence (IJCAI 2021).
- Program Committee Member of the International Joint Conference on Rough Sets, 2021.
- Program Committee Member of International Joint Conference on Artificial Intelligence (IJCAI 2020).
- Program Committee Member of the 34th AAAI Conference on Artificial Intelligence (AAAI 2020).
- Program Committee Member of International Joint Conference on Artificial Intelligence (IJCAI 2019).
- Program Committee Member of the 33rd AAAI Conference on Artificial Intelligence (AAAI 2019).
- Program Committee Member of 2018 International Conference on Big Data Engineering and Technology (BDET 2018).

- Program Committee Member of ICCCBDA 2018.
- Program Committee Member of 7th International Conference on Embedded Systems and Applications (EMSA-2018) on Embedded Systems. 2018.
- Program Committee Member of the First Doctoral Symposium of Computational Intelligence and Its Applications (DS CIIA). 2018.
- Technical Program Committee Member of the 2018 International Conference on Computing, Networking and Communications (ICNC): Communications and Information Security Symposium, 2018.
- Program Committee Member of the 31st International Conference on Industrial, Engineering and other Applications of Applied Intelligent Systems (IEA/AIE 2018).
- Programming Committee Member of International Conference on Computational Intelligence and Its Applications (CIIA 2018).
- Programming Committee Member of 8th International conference on Database Management Systems, 2017.
- Program Committee member of Fifth International Conference on Data Mining & Knowledge Management Process, 2017.
- Program Committee member of International Joint Conference on Rough Sets, 2017.
- Program Committee member of the Second International Conference on Data Mining & Knowledge Management, 2017.
- Technical Program Committee Member of 2017 IEEE International Conference on Cloud Computing and Big Data Analysis, 2017.
- Program Committee member of 30th Canadian Conference on Artificial Intelligence, 2017.
- Program Committee Member of BICS2016 (8th International Conference on Brain-Inspired Cognitive Systems), 2016.
- Technical Program Committee Member of 2016 IEEE International Conference on Cloud Computing and Big Data Analysis, 2016.
- Program Committee Member of the International Joint Conference on Rough Sets, 2016.
- Program Committee Member of the 5th IFIP International Conference on Computer Science and Its Applications, 20-21 May 2015, Saida University, Algeria.
- Program Committee Member of the 4th International Conference on Computer Science and Its Applications. May 4-6, 2013. Saida, Algeria.
- Program Committee Member of the 4th Rough Set Theory Workshop (associated with Joint Rough Set Symposium). October 11-14, 2013, Halifax, Canada.
- Program Committee Member of the 2013 Canadian Conference on Electrical and Computer Engineering. May 5-8, 2013, Regina, Canada.

Editor

- Computers & Electrical Engineering, Special Issue on Uncertainty Reasoning, 2022
- Editorial Board Member of International Journal of Advances in Computer, Electrical and Electronics Engineering (IJACEEE), 2017.
- Guest Editor of the Special Session Cost-sensitive learning in Mathematical Problems in Engineering, 2014.
- Editorial Board member of the book "ICTs and the Millennium Development Goals - A United Nations Perspective" (<http://www.ict-mdg.com>).

Reviewer

- Reviewer of Pattern Recognition.
- Reviewer of International Journal of Approximate Reasoning.

- Reviewer of International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems.
- Reviewer of Information Sciences.
- Reviewer of Applied Mathematics & Information Sciences.
- Reviewer of International Journal of Machine Learning and Cybernetics (JMLC).
- Reviewer of Knowledge-Based Systems.
- Reviewer of Annals of Fuzzy Mathematics and Informatics.
- Reviewer of Neurocomputing.
- Reviewer of Science Bulletin.
- Reviewer of International Journal of Pattern Recognition and Artificial Intelligence.
- Reviewer of Science China Information Sciences.
- Review of IEEE Transactions on Cognitive and Developmental Systems.
- Reviewer of Sensors, Journal.
- Reviewer of Numerous conferences.

Conference Session Chair

- The 2018 IEA/AIE. Montreal, Canada, 2018.
- The 2016 International Joint Conference on Rough Sets (IJCRS2016). Santiago, Chile, October 2016.
- The 2015 International Joint Conference on Rough Sets (IJCRS2015). Tianjin, China, November 2015.
- The 2014 Joint Rough Set Symposium (JRS2014), Madrid, Spain, July 2014.
- A joint conference of the 14th International Conference on Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC13), Halifax, Canada. October 2013.

Peer Review of ABET Accredited Programs

- External reviewer of ABET accredited programs at Department of Computer Science, University of Central Oklahoma

OTHER SERVICE ACTIVITIES

Service to the Department

- Department chair (Fall 2020 - present).
- Graduate co-advisor (Fall 2018 – Summer 2020).
- Faculty search committee (Fall 2015 – Spring 2021).
- Committee chair of Undergraduate Curriculum Committee (UCC) (Fall 2015 – Summer 2017).
- Vice chair of UCC (Fall 2017 – Fall 2018).
- UCC member since Fall 2012.
- Graduate Program Admission Committee member (Summer 2020 – Summer 2021)
- PhD Program Admission Committee member (Spring 2021 – present)
- DPTAC committee member since Fall 2018.
- ABET accreditation committee member since Fall 2012.
- Graduate Curriculum Committee (GCC) member since Fall 2012.
- Graduate program review committee member (Spring 2020).
- Supporting faculty of graduate student internship in Summer and Fall 2014.
- CS student advisor since Fall 2013.

- Advising undergraduate students.
- Supervising/advising graduate students for their master program project/thesis.
- Supervising PhD student for their research.
- Supervising undergraduate students' honor project and independent studies.
- Attended and hosted advisory board meeting.
- Scholarship Committee member
- Continuous Improvement Committee (CIC) Chair
- Prepared CAE annual report

Service to the College

- College Executive council (Fall 2020 - present).
- COSET Transcript Evaluator since Fall 2019.
- College Meta-Assessment Committee member since Fall 2015.
- Supporting faculty of college curriculum committee since Fall 2015.

Service to the University

- Faculty Women's Advisory Committee member from Fall 2015 to Spring 2016.
- Distinguished Lecturer Series Committee member from Fall 2015 to Summer 2018.
- Academic chair council (Fall 2020 - present).
- Academic Affairs council (Fall 2020 - present).
- Strategic Priority Goal Task Force Co-lead (Fall 2022)

Service to the Community

- Region 6 Education Service Center consultant for the WeTeach_Computer Science Collaborative Grant and served on face to face and distance learning sessions since Spring 2017.
- Invited speaker for CAPST Investment Club lecture series: "Big Data, Cloud Computing, and Applications" at Houston, November 2015.
- Volunteer of the BEST Robotics competition in 2012, 2013, 2014, and 2015.
- Judge for High School Java Programming Competition in Spring 2013.
- Donation to the SHSU Annual Fund (\$240 per year to the CS/DF scholarship) since Fall 2012.

GRADUATE ADVISING

Graduate Student Committee Chair

- Akporode Enaohwo, Securing runtime containers, Fall 2021 – Fall 2022
- Todd Mason, Digital Forensics process of an attack vector in an ICS environment, Spring 2020 – Summer 2020
- Brianna Kayser, Information and Cyber Security Practicum, Spring 2020 – Fall 2020
- Shinelle Hutchinson, Detecting Google's Play Protect Service Vulnerabilities through Android Spyware, Fall 2018 – Spring 2019
- George Ogungbemile (thesis option), Qualitative Cleaning Methods on Distributed IoT Data Streams, Fall 2018 – Spring 2019

- Doug Weeks, Physical Security Design for Digital Forensics Labs, Fall 2018 – Spring 2019
- Oladipo Olaonipekun, Improved Supervised learning on Fraud Detection, Fall 2017 –
- Carlos Abanto, Market Watch based on Android, Graduated Summer 2017
- Anuritha Juvvadi, State-of-art Hybrid Algorithm using K-Means, Fall 2016
- Kaladhar Ganta, Combined Enhanced LWSE Algorithm with OTP Algorithm for Secure Database, Graduated Fall 2016.
- Raja Karuparthi, Context Awareness Based Sensor Data Collection in Smartphone, Graduated Spring 2016.
- Norhaza Yusoff, The Importance of Data Sanitization in SQL Injection Prevention, Fall 2013 – Fall 2015.
- Franklin Leung, Performance Evaluation of SQL-based and NoSQL-based Database Management Systems with large datasets, Graduated Summer 2015.

Graduate Student Committee Member

- Naciye Celebi, Fall 2021 – present
- Gazeau, Valentin, Spring 2022 – present
- Ceballos Delgado, Alberto, Spring 2022 – present
- Biodoumoye Bokolo, Spring 2022 – present
- Razaq Jina, Biodoumoye Bokolo, Spring 2022 – present
- Khushi Gupta, Spring 2022 – present
- Gelso Rosa, Safeguarding the Legitimacy of American Elections, Fall 2021 – present
- Abijeet Singh, Spring 2021 – Fall 2022
- Emerson de Lemmus, Cotton Disease Classification using Deep Learning, Fall 2021 - present
- Gelso Rosa, Safeguarding the Legitimacy of American Elections, Fall 2021 - present
- Steven Zavala, Disaster Recovery Management with PowerShell PSDRm, Spring 2021 – Fall 2021
- Joshua Hightower, investigating algorithms to implement and detect repackaged applications, Spring 2020 – Fall 2020
- Nina Loahardjo, Network Security Recommendation for Defense-in-Depth of ICS Industries Using Web-Based/Excel Risk Assessment Matrix Factors, Spring 2020 – Summer 2020
- Qun Yin, Food delivery app for Android, Spring 2019 – Fall 2020
- Marie Brownhill, Development of an Investigative Model to Accommodate Current Application, Spring 2019 – Summer 2019
- Gregory Lewis, Social Media and Privacy, Spring 2019 – Fall 2019
- Nicholas Carlson, Age Detection from Chat Messages, Spring 2019 – Summer 2019
- Raul Garcia, Machine Learning and Behavior Analysis Security Solutions for Large Businesses, Spring 2019 – Fall 2019
- Cody Buck, Form Driven Database Evolution and Security, Spring 2019 – Fall 2019.
- Qizhao Li (thesis option), Comparison between Spark-based NNMF and Tensorflow- based NNMF, Fall 2018 – Summer 2019
- Adi Morag, Unsupervised Music Note Recognition, Fall 2018 – Spring 2019
- Zhaohe Zhang (thesis option), Using Image Recognition to Classify Galaxy, Fall 2018 – Spring 2019
- Sooho Bae, Privacy of Cloud Computing, Fall 2018 –

- Anthony Sims, Reverse Engineering Malware, Fall 2018 – Spring 2019
- Benjamin Taylor, Latent Print Analysis with Tensorflow. Fall 2017 – Spring 2018
- Mitchell Singleton, Detecting Digital Photo Tampering with Deep Learning, Fall 2017 – Spring 2018
- Andrew Bannon, 4G networks for local municipalities, Fall 2015 –
- Willie Smith, Implementation of the NOMINATE Algorithm in Apache Spark, Graduated Fall 2017.
- Kenneth Hill, Ad Hoc Network Security, Graduated Spring 2017.
- Xin Zhang, ETL for Medical Data with Apache Spark, Graduated Summer 2017.
- Larry Carter, An Approach to Enhanced Security in Prison Systems, Graduated Spring 2017.
- Mark Sossaman, Exploration of Security Concerns with Wireless Sensor Networks, Spring 2016 –
- Nora Munoz, Abnormal Event Detection in Digital Videos, Graduated Summer 2017
- Sunil Kallepu, Efficient Broadcasting Algorithm in Wireless Sensor Networks, Graduated Spring 2017
- Mammadov Khatai, Implementation of Relief and Las Vegas Filter Feature Selection algorithms using Apache Spark, Graduated Fall 2017.
- Shipo Wang, JPEG Image Steganography on Smartphone, Graduated Spring 2017
- Andrew Bannon, 4G networks for local municipalities, Fall 2015 –
- Richard Wilkins, Create an Expert Learning System for Digital Forensics Investigators, Fall 2013 –
- Candice Withrow, Analyzing Astronomical Data Using Apache Spark, Graduated Summer 2016.
- James Taylor, Guided Tour iPhone App, Graduated Fall 2016.
- SriKanth Kambam, Application of Longest Common Subsequence in Author Disambiguation, Graduated Spring 2016.
- Corey March, Challenges of Digital Forensics in a VDI/Cloud Environment, Graduated Summer 2016.
- Abhinov Chinthireddy, Designing a Universal Rating Web Based Application Using Sentiment Analysis, Graduated Spring 2016.
- Michaila Duncan, Differentiation Tool among Children and Adults in Pictures for Forensic Investigations, Spring 2016.
- Keerthi Koneru, Phonetic matching toolkit with state-of-the-art meta-soundex algorithm, Graduated Fall 2016.
- Ferdiansyah Mastjik, Analysis of String Similarity for Malware Identification, Graduated Spring 2015.
- Shannon Silessi, Gender identification from SMS text messages, Graduated Fall 2015.
- Victor Garcia, Digital Forensics of a 3D Printer, Graduated Spring 2015.
- Ty Bermean, What is an IMSI Catcher? Who Use It? How to Build One without Nation State Recourses? Graduated Summer 2015.
- Ugochukwu Onochie, Low-Cost SIEM Solutions for Risk Mitigation and PCI DSS Compliance Supporting, Graduated Summer 2015.
- Qian Li, Stock Market Prediction Research Based on Twitter Social Network, Graduated Fall 2015.
- Eloho Sido, Location-based Intelligent EMS Response System: A Case for Nigeria,

Graduated Spring 2015.

- Brittany Byrd, The Effectiveness of the Factory Reset Feature within the Android Smartphone Platform, Graduated Summer 2015.
- Sri Kanth Mogali, Securing dropbox files in local systems, Graduated Fall 2014.
- David Blalock, Matrix Decomposition Toolbox using R, Graduated Fall 2013.

Internship Graduate Students:

- Subash Saladi, work on Advanced Java Web Applications “Test Order Management System (TOMS)” at Computerized Assessments and Learning(CA&L). Summer 2014.
- Sundar Krishnan, internship with Indusoft (An Invensys company and now a Schneider Electric company) [www.indusoft.com] based out of Austin, Texas. Summer 2014.
- Kevin Cohn: FBI Honors internship as a graduate student. Fall 2014.

UNDERGRADUATE ADVISING

Special Topic Projects

- Feng Xin, An empirical study of Oracle database, Spring 2013.
- Quan Do, A comparison study of classification algorithms in Data Mining, Summer 2013.
- Matthew Lupo, Creating web generation program – ScorFramework, Spring 2014.
- Ji Chen, A comparison study of classification algorithms in Data Mining, Spring 2014
- Dustin Johnson, Making Database Applications User Friendly on Mobile Device, Summer 2015.
- Liliana Ortiz, Encrypted Booklander, Summer 2016.
- Darryl Idle, Detecting Automated SQL Injection Attempts using Log Manager, Summer 2016.
- Samuel Rakowitz, File structure project, Spring 2017.
- Christopher Smith, A simple library catalog system, Fall 2018
- Batuhan Keskin, Bank management system, Fall 2018
- Information System Design and Management, Year 2020

Spring 2020	Fall 2020
Adam Foger	Jesse Schultz
Aayush Panday	Taziamoma Abraham
Anupama Neupane	Rajan Adhikari
Garrett Shefstad	Adam Foger
Nils Witaneck	Justin Gooden
Pujan Subedj	Kubra Gundogan
Sagar Sapkota	Phil Huddleston
Miriam Ekiye	Akriti Koirala
	Nuri Kose
	Zachary Nabors
Spring 2021	Fall 2021
James Minard	Saranya Srikanth
Prince Owusu	
Zachary Page	
Carilyn Santisteban	
Wilfredo Hernandez Escobar	
Todd De Luise	
Gabriel Alao	

Amanda Rincon Morales		
• Independent Studies		
Spring 2022	Summer 2022	Fall 2022
Tyler Sorrells	Rohan Dahal	Westin Reasons

Projects of Graduating with Honors

- Nancy Sodemann, Database Security - cryptographic hash function for password protection, Fall 2012.
- Yanxin, Liu, Database Security - cryptographic hash function for password protection, Fall 2013.
- Joshua Hightower, Adding HCI features to DBMS applications, Spring 2014.
- Zhaohe Zhang, Database Security - cryptographic hash function for password protection, Spring 2014.
- Arsalan Zulfiqar, Building DBMS applications with GUI interface, Fall 2014.
- Amsal zulfiqar, Building DBMS applications with GUI interface, Fall 2014.
- Nouhaila Bahtat, Introduction to computer network applications, Spring 2020.

PROFESSIONAL DEVELOPMENT

- Texas Academic Leadership Academy, 2021-2022.
- CCAS workshop for department chairs, February 2020, Savannah.
- ABET Commission Meeting as institutional representative of SHSU, July 2018.
- Leadercast Women, Fall 2018.
- NSF supported Mobile Summer Institute for active learning, May 2018.
- Training session for Promotion and Tenure. November 8, 2017.
- CampusLabs Training Session, SHSU, September 27, 2017.
- NSF Workshop – webinar, October 2015.
- The 5th Annual SHSU Online Teaching and Learning Conference, March 2015
- The Writing & Designing NSF Proposals Workshop, Houston, Jan 2014.
- Teaching Online with Blackboard Certification Series at SHSU, 2014.