

# HUIPING CAO, Ph.D.

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Professor  
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DBLP profile: <https://dblp.org/pid/04/492.html>

## 1 EDUCATION

- **Doctor of Philosophy** in Computer Science 09/2002 - 11/2007  
The University of Hong Kong, Hong Kong  
*Thesis title: Pattern Discovery from Spatiotemporal Data*  
Supervisors: Dr. David W. Cheung, Dr. Nikos Mamoulis
- **Master of Science** in Computer Science 09/1999 - 07/2002  
School of Information, Renmin University of China, Beijing, China
- **Bachelor of Science** in Management Information Systems 09/1995 - 07/1999  
School of Information, Renmin University of China, Beijing, China

## 2 RESEARCH INTERESTS

My research interests are in the general area of data mining, data engineering, and applied machine learning with emphasis on:

- Data mining: time series (e.g., spatiotemporal data, sensor data) mining, graph (e.g., social networks) mining
- Applied machine learning: federated learning, deep neural networks, attention mechanisms, probabilistic graphical models
- Data engineering: graph search, data integration, query processing
- Application domains: smart grids, agriculture, high performance computing

## 3 APPOINTMENTS

- **Professor** 08/2022 - present  
Department of Computer Science, New Mexico State University  
Las Cruces, New Mexico
- **Associate Department Head** 08/2024 - present  
Department of Computer Science, New Mexico State University  
Las Cruces, New Mexico
- **Interim Department Head** 01/2024 - 06/2024  
Department of Computer Science, New Mexico State University  
Las Cruces, New Mexico
- **Associate Professor** 08/2016 - 08/2022  
Department of Computer Science, New Mexico State University  
Las Cruces, New Mexico
- **Assistant Professor** 08/2010 - 08/2016  
Department of Computer Science, New Mexico State University  
Las Cruces, New Mexico
- **Postdoctoral Research Fellow** 11/2009 - 07/2010  
National Center for Ecological Analysis and Synthesis,  
University of California Santa Barbara  
Santa Barbara, California

- **Postdoctoral Research Associate**  
Computer Science & Engineering, Arizona State University  
Tempe, Arizona

06/2007 - 11/2009

## 4 AWARDS

- 2023, Distinguished Associate Editor, ACM Special Interest Group on Management of Data SIGMOD 2023
- 2022, Outstanding Service Award, 15th ACM International Web Search and Data Mining (WSDM) Conference.
- 2019-2023, The first recipient of the Hue and Pat McCoy Endowed Professorship in Computer Science, NMSU.
- 2020, Outstanding Reviewer Award, 24th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD).
- 2018-2019, Outstanding Graduate Faculty in Teaching, the Computer Science Graduate Student Organization (CSGSO), NMSU .
- 2016, Service Award, ACM Special Interest Group on Management of Data (SIGMOD).

## 5 TEACHING EXPERIENCE

### 5.1 New Mexico State University

Department of Computer Science

Las Cruces, New Mexico

- C S 171: Introduction to Computer Science (non-CS undergraduate course):  
Fall 2017
- C S 272/463: Introduction to Data Structures (undergraduate required course):  
Spring 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015, Spring 2019, Fall 2019, Spring 2020
- CS 343/493: Algorithm Design and Implementation (undergraduate and graduate cross-listed course):  
Fall 2018, Spring 2021, Spring 2022, Spring 2024
- C S 371/468: Software Development (undergraduate and graduate cross-listed course):  
Fall 2017
- C S 479/579: Special Topic on Data Mining (undergraduate and graduate cross-listed course):  
Fall 2011, Fall 2012
- CS 479: Special Topic on Algorithm Design and Implementation (undergraduate course):  
Spring 2016
- C S 487/519: Applied Machine Learning I (undergraduate and graduate cross-listed course):  
Fall 2018, Spring 2020, Spring 2022, Spring 2023
- C S 488/508: Introduction to Data Mining (undergraduate and graduate cross-listed course):  
Fall 2014, Fall 2015, Fall 2016, Fall 2021, Fall 2022
- C S 482/502: Database Management Systems I (undergraduate and graduate cross-listed course):  
Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2016, Fall 2020, Fall 2021, Fall 2022
- C S 582: Database Management Systems II (graduate course):  
Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015, Spring 2016

### 5.2 Arizona State University

Computer Science & Engineering,

School of Computing, Informatics, and Decision Systems Engineering

Ira Fulton School of Engineering, Arizona State University

Tempe, Arizona

- CPI 310: Information and Data Management (certificate course):  
Fall 2008

## 6 MENTORING AND ADVISING

- Postdoctoral researcher mentoring

1). Mehmet Emin Bakir (Postdoctoral research associate, 06/2023 - present)

- 2). Milan Biswal (Postdoctoral research associate, 08/2014 - 08/2016)
- Doctoral committee chair (5 graduated, in reverse order of the graduation time)
    - 1). Erick Draayer (01/2019 - 07/2024, graduated in Summer 2024)  
Thesis title: *Segmentation and Uncertainty Quantification for Complex Time Series*
    - 2). Qixu Gong (08/2015 - 12/2021, graduated in Fall 2021)  
Thesis title: *Processing Skyline Path Queries over Multi-dimensional Transportation Networks*
    - 3). Edgar Ceh-Varela (01/2017 - 03/2021, graduated in Spring 2021)  
Thesis title: *Modeling User Preferences and Item Characteristics to Improve Group and Multi-criteria Recommendations*
    - 4). Yifan Hao (08/2014 - 12/2020, graduated in Fall 2020)  
Thesis title: *Deep Learning Approaches to Extract Features from and Classify Multivariate Time Series Data*
    - 5). Chuan Hu (08/2012 - 05/2017, graduated in Spring 2017)  
Thesis title: *Discovering Influence Relationships from Graph Structured Data*
  - Doctoral committee chair (2 in progress, in reverse order of the starting time)
    - 1). Jiefei Liu (08/2022 - present)
    - 2). Hoang Trung Le (01/2021 - present)
  - Master's committee chair (24 in total, in reverse order of the graduation time)
    - 1). Bryson Stemock (08/2024 - present)
    - 2). Meng-Yang Tseng (08/2024 - present)
    - 3). Md Ishtiaq Ahmed (01/2024 - present)
    - 4). Wenbin Jiang (01/2024 - present)
    - 5). Stephen Villanueva (08/2023 - present)
    - 6). Yuxi Wang (01/2023 - present)
    - 7). Huiying Chen (08/2020 - present)
    - 8). Yanli Lyu (01/2024 - 06/2024)  
Project title: *Entity Extraction from Astronomical Literature using LLMs*
    - 9). Edgar Corrales Sotelo (01/2023 - 05/2023)  
Project title: *Cattle Activities Classification*
    - 10). Shahriar Rahman Dipon (01/2022 - 05/2023)  
Project title: *Classification of Environmental Events Triggered by Drought Using Machine Learning Algorithms*
    - 11). Sajidur Rahman (01/2022 - 05/2023)  
Project title: *A scalable high-frequency data integration and visualization platform for the Internet-Of-Things(IoT) devices deployed in cattle ranches*
    - 12). Jiefei Liu (graduated in 07/2022)  
Project title: *Cow Behavior Analysis Using Unsupervised Machine Learning Techniques*
    - 13). Adetoye Abodunrin (graduated in 12/2020)  
Project title: *Modeling the Effect of Weather Factors on Solar Panel Production*
    - 14). Beepana Pokharel (graduated in 12/2020)  
Project title: *Quantitative Analysis of Produced Water in Permian Basin-New Mexico using Machine Learning Methods*
    - 15). Ramin Zahedi Darshoori (graduated in 06/2020)  
Project title: *Neural Network Based Approaches to Mobile Target Localization and Tracking Using Unmanned Aerial Vehicles*
    - 16). Ashley Michalenko (graduated in 12/2018)  
Project title: *A System to Streamline Data Analysis on Engineering Coursework*
    - 17). Jacob Voldez (graduated in 12/2018)  
Project title: *Analysis of the Effects of Blind Review Policy in Computer Science Conferences*
    - 18). Panika Valecha (graduated in 07/2018)  
Project title: *Analysis of Storage Error Events for High Performance Computing Systems*
    - 19). Raul Alvarado Garcia (graduated in 12/2016)  
Project title: *Finding Shortest Paths using Landmark Index on Neo4*

- 20). Mitra Solgi (graduated in 12/2015)  
Project title: *Classification of Healthcare Data*
  - 21). Mahmoud Sharifi (graduated in 05/2014)  
Project title: *Effect of Feature Extraction Techniques on Time Series Clustering and a Proposed Idea for Semi-supervised Clustering*
  - 22). Abdulwart Heshek (graduated in 12/2013)  
Project title: *Computing Alliance for Hispanic-Serving Institutions (CAHSI) Ontology Modeling*
  - 23). Yifan Hao (graduated in 05/2013)  
Thesis title: *Keyword Search over Graphs using MapReduce*
  - 24). Aditya Madadi (graduated in 12/2012)  
Project title: *Approaches to Extract Relationships among Attribute Values from Spatiotemporal Data*
- Undergraduates directly advised in research projects  
(23 in total, in reverse order of the starting time)  
Juan Torres (06/2024 - present), Brady Scaggari (04/2024 - present), Jason Miller (02/2023 - 12/2023), Brock Middleton (05/2023 - 08/2023), Yuxi Wang (05/2020 - 08/2020), Wen Yang (04/2020 - 09/2020), Benjamin Peaslee (06/2020 - 08/2020), Kami Otero De Owens (06/2020 - 08/2020), Nehomah Mora (06/2020 - 08/2020), Stormy Valenzuel (06/2020 - 08/2020), Jiefei Liu (08/2018 - 05/2020), Omar Navarro (08/2019 - 01/2020), Caitlin Ard (08/2018 - 12/2018), Michael Meerbott (12/2017 - 05/2018), Ian Goetting (12/2017 - 05/2018), Brett Pelkey (06/2015 - 05/2017), Erick Draayer (06/2015 - 12/2015), Harold Hughs (06/2015 - 10/2015), Stefan Ceballos (01/2015 - 01/2016), Erik Ness (01/2015 - 05/2015), Chaomin Ke (01/2012 - 05/2012), Zhe Xie (01/2012 - 05/2012), Yangpai Liu (01/2011-05/2011),

## 7 PUBLICATIONS

\*\* - undergraduate students whom I advise in research projects.

\* - graduate students or postdoctoral researchers whom I advise or work closely with.

### 7.1 Journal Articles

#### Journal Articles - CS venues

- J1. Qixu Gong\*, Huiying Chen\*, **Huiping Cao**, Jiefei Liu\*: Backbone Index and GNN Models for Skyline Path Query Evaluation over Multi-cost Road Networks. ACM Transactions on Spatial Algorithms and Systems (TSAS), April, 2024. <http://dx.doi.org/10.1145/3660632>.
- J2. Edgar Ceh-Varela\*, **Huiping Cao**, Hady W. Lauw: Performance Evaluation of Aggregation-based Group Recommender Systems for Ephemeral Groups. ACM Transactions on Intelligent Systems and Technology (TIST), Volume 13, Issue 6, Pages 1-26. 2022. <https://doi.org/10.1145/3542804>
- J3. Yifan Hao\*, **Huiping Cao**, Abdullah Mueen, Sukumar Brama: Identify Significant Phenomenon-specific Variables for Multivariate Time Series. IEEE Trans. Knowl. Data Eng. (TKDE) 33(3): 1019-1031 (2021). <https://doi.org/10.1109/TKDE.2019.2934464>.
- J4. Chuan Hu\* and **Huiping Cao**: Aspect-Level Influence Discovery from Graphs. IEEE Trans. Knowl. Data Eng. (TKDE) 28(7): 1635-1649 (2016) <https://doi.org/10.1109/TKDE.2016.2538223>
- J5. James Obert\*, Inna Pivkina, Hong Huang, **Huiping Cao**: Proactively applied encryption in multipath networks. In Computers & Security, Volume 58, 106-124, May 2016. <https://doi.org/10.1016/j.cose.2015.12.003>
- J6. Yifan Hao\*, **Huiping Cao**, Chuan Hu\*, Kabi Bhattarai\*, Satyajayant Misra: K-anonymity for social networks containing rich structural and textual information. Social Netw. Analys. Mining 4(1): 222-261, August (2014). <http://link.springer.com/article/10.1007%2Fs13278-014-0223-3>
- J7. James Obert\*, **Huiping Cao**, Hong Huang: Determination of Multipath Security Using Efficient Pattern Matching. In International Journal of Computer Science and Information Security (IJCSIS), 11(11), 24-33 (2013). <https://arxiv.org/abs/1311.3716>
- J8. **Huiping Cao**, Shawn Bowers, Mark P. Schildhauer: Database Support for Enabling Data-Discovery Queries over Semantically-Annotated Observational Data. In LNCS Transactions on Large-Scale Data- and Knowledge-Centered Systems (TLDKS), 6: 198-228 (2012). [http://link.springer.com/chapter/10.1007%2F978-3-642-34179-3\\_7](http://link.springer.com/chapter/10.1007%2F978-3-642-34179-3_7)

- J9. K. Selçuk Candan, **Huiping Cao**, Yan Qi, and Maria Luisa Sapino: System Support for Exploration and Expert Feedback in Resolving Conflicts during Integration of Metadata. In *The VLDB Journal*, 17(6): 1407-1444, 2008. <https://doi.org/10.1007/s00778-008-0109-y>
- J10. **Huiping Cao**, Nikos Mamoulis, and David W. Cheung: Discovery of Periodic Patterns in Spatiotemporal Sequences. In *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 19(4): 453-467, 2007. <https://doi.org/10.1109/TKDE.2007.1002>
- J11. **Huiping Cao**, Shan Wang, and Lingwei Li: Location Dependent Query in a Mobile Environment. In *Journal of Information Sciences*, 154(1-2): 71-83, 2003. <http://www.sciencedirect.com/science/article/pii/S0020025503000355>

#### Journal Articles - non-CS venues

- J12. Jiefei Liu, Derek Bailey, **Huiping Cao**, Tran Cao Son, Colin T. Tobin: Development of a Novel Classification Approach for Cow Behavior Analysis Using Tracking Data and Unsupervised Machine Learning Techniques. In *Sensors* 2024, 24(13), 4067. <https://doi.org/10.3390/s24134067>
- J13. Colin Tobin, Derek Bailey, Caroline Wade, Ly Ly Trieu, Kelsey Nelson, Cory Oltjen, **Huiping Cao**, Tran Cao Son, Victor Flores, Briza Castro, Jennifer Hernandez Gifford, Mark Trotter, David Kramar: Evaluation of experimental error in accelerometer monitoring: Variation among individual animals versus variation among devices. In *Smart Agricultural Technology*, Volume 7, 2024, 100432. <https://doi.org/10.1016/j.atech.2024.100432>
- J14. Matthew M. McIntosh, Andres F. Cibils, Shelemia Nyamuryekung'e, Richard E. Estell, Andrew Cox, Danielle Duni, Qixu Gong, Tony Waterhouse, John Holland, **Huiping Cao**, Laura Boucheron, Huiying Chen, Sheri Spiegel, Glenn Duff, Santiago A. Utsumi: Deployment of a LoRa-WAN near-real-time precision ranching system on extensive desert rangelands: What we have learned. *Applied Animal Science* 39:349–361. <https://doi.org/10.15232/aas.2023-02406>
- J15. Shelemia Nyamuryekung'e, Glenn Duff, Santiago Utsumi, Richard Estell, Matthew M. McIntosh, Micah Funk, Andrew Cox, **Huiping Cao**, Sheri Spiegel, Andres Perea, Andres F Cibils: Real-Time Monitoring of Grazing Cattle Using LORA-WAN Sensors to Improve Precision in Detecting Animal Welfare Implications via Daily Distance Walked Metrics. *Animals* 13, no. 16: 2641. <https://doi.org/10.3390/ani13162641>
- J16. Ly Ly Trieu, Derek W. Bailey, **Huiping Cao**, Tran Cao Son, David R. Scobie, Mark G. Trotter, David E. Hume, B. Lee Sutherland, Colin T. Tobin: Potential of Accelerometers and GPS Tracking to Remotely Detect Perennial Ryegrass Staggers in Sheep. In *Smart Agricultural Technology*, Volume 2, December 2022. <https://doi.org/10.1016/j.atech.2022.100040>
- J17. Wenbin Jiang, Beepana Pokharel\*, Lu Lin, **Huiping Cao**, Kenneth C Carroll, Yanyan Zhang, Carlos Galdeano, Deepak A. Musale, Ganesh L. Ghurye, and Pei Xu: Analysis and Prediction of Produced Water Quantity and Quality in the Permian Basin using Machine Learning Techniques. In *Science of the Total Environment*, Volume 801, 2021. <https://doi.org/10.1016/j.scitotenv.2021.149693>
- J18. Matthew M McIntosh, Andres F Cibils, Richard E Estell, Shelemia Nyamuryekung'e, Alfredo L González, Qixu Gong, **Huiping Cao**, Sheri A Spiegel, Sergio A Soto-Navarro, Amanda D Blair: Weight Gain, Grazing Behavior and Carcass Quality of Desert Grass-fed Rarámuri Criollo vs. Crossbred Steers. In *Livestock Science*, Volume 249, July 2021. <https://doi.org/10.1016/j.livsci.2021.104511>
- J19. Sheri Spiegel, Andres F Cibils, Brandon T Bestelmeyer, Jean L Steiner, Richard E Estell, David W Archer, Brent W Auvermann, Stephanie V Bestelmeyer, Laura E Boucheron, **Huiping Cao**, Andrew R Cox, Daniel Devlin, Glenn C Duff, Kristy K Ehlers, Emile H Elias, Craig A Gifford, Alfredo L Gonzalez, John P Holland, Jenny S Jennings, Ann M Marshall, David I McCracken, Matthew M McIntosh, Rhonda Miller, Mark Musumba, Robert Paulin, Sara E Place, Matthew Redd, C Alan Rotz, Cindy Tolle, Anthony Waterhouse: Beef production in the southwestern United States: strategies toward sustainability. In *Frontiers in Sustainable Food Systems*, Volume: 4, 2020. Pages 114. <https://doi.org/10.3389/fsufs.2020.00114>
- J20. Sukumar Brahma, Rajesh Kavasseri, **Huiping Cao**, Nilanjan Ray Chaudhuri, Theodoros Alexopoulos, and Yinan Cui: Real Time Identification of Dynamic Events in Power Systems using PMU data, and Potential Applications - Models, Promises, and Challenges. In *IEEE Transactions on Power Delivery*, Volume: 32, Issue: 1, 2017. Pages 294 - 301. <http://dx.doi.org/10.1109/TPWRD.2016.2590961>.
- J21. Phani Harsha Gadde, Milan Biswal\*, Sukumar Brahma, and **Huiping Cao**, Efficient Compression of PMU Data in WAMS, *IEEE Transactions on Smart Grid*. 7(5): 2406 - 2413, 2016. <http://dx.doi.org/10.1109/TSG.2016.2536718>.
- J22. Milan Biswal\*, Sukumar M. Brahma, and **Huiping Cao**. Supervisory Protection and Automated Event Diagnosis using PMU Data, *IEEE Transactions on Power Delivery (TPD)*, 31 (4), pages 1855-1863 (2016). <http://dx.doi.org/10.1109/TPWRD.2016.2520958>.

- J23. Mohammed N. Sawalhah, Andres F. Cibils, Aditya Madadi\*, **Huiping Cao**, Dawn M. Vanleeuwen, Jerry L. Holechek, Christina M. Black Rubio, Robert L. Wesley, Rachel L. Endecott, Travis J. Mulliniks, and Mark K. Petersen: Forage and weather influence day- vs. nighttime cow behavior and calf weaning weights on rangeland. In *Rangeland Ecology & Management* 69 (2016), 134 - 143.
- J24. Mohammed N. Sawalhah, Andres F. Cibils, Chuan Hu\*, **Huiping Cao**, and Jerry L. Holechek: Animal-Driven Rotational Grazing Patterns on Seasonally Grazed New Mexico Rangeland. In *Rangeland Ecology & Management* 67:710-714 (November 2014). <http://dx.doi.org/10.2111/REM-D-14-00047.1>
- J25. Om P. Dahal\*, Sukumar M. Brahma, **Huiping Cao**: Comprehensive Clustering of Disturbance Events Recorded by Phasor Measurement Units. In *IEEE Transactions on Power Delivery*, Volume: 29 (3): 1390 - 1397, June 2014. <http://dx.doi.org/10.1109/TPWRD.2013.2285097>
- J26. Jingyu Han, Kejia Chen, Zhiming Ding, **Huiping Cao**: An efficient location reporting and indexing framework for urban road moving objects. *Distributed and Parallel Databases* 32(2): 271-311 (2014). <http://link.springer.com/article/10.1007%2Fs10619-013-7135-5>

## 7.2 Refereed and Archived Conference Papers

### Refereed and Archived Conference Papers - CS venues

- C1. Erick Draayer\*, **Huiping Cao**: Towards Uncertainty Quantification for Time Series Segmentation. Accepted to be published in *ACM Information and Knowledge Management (CIKM)* 2024. (Acceptance rate: 23%).
- C2. Jiefei Liu\*, **Huiping Cao**, Abu Saleh Md Tayeen, Satyajayant Misra, Pratyay Kumar, and Jayashree Harikumar: Multi-Model-based Federated Learning to Overcome Local Class Imbalance Issues. In *Proc. of IEEE Intl. Conf. on Machine Learning and Applications (ICMLA)* 2023, pp. 265-270. <https://doi.org/10.1109/ICMLA58977.2023.00044>
- C3. Pratyay Kumar\*, Jiefei Liu\*, Abu Saleh Md Tayeen, Satyajayant Misra, **Huiping Cao**, Jayashree Harikumar, and Oscar Perez: FLNET2023: Realistic Network Intrusion Detection Dataset for Federated Learning. In the *Proc. of IEEE Military Communications Conference (MILCOM)* 2023, pp. 345-350. <https://doi.org/10.1109/MILCOM58377.2023.10356272>
- C4. Abu Saleh Md Tayeen, Satyajayant Misra, **Huiping Cao**, and Jayashree Harikumar: CAFNet: Compressed Autoencoder-based Federated Network for Anomaly Detection. In the *Proc. of IEEE Military Communications Conference (MILCOM)* 2023, pp. 325-330. <https://doi.org/10.1109/MILCOM58377.2023.10356377>
- C5. Trung Hoang Le\*, **Huiping Cao**, Tran Cao Son: ASPER: Answer Set Programming Enhanced Neural Network Models for Joint Entity-Relation Extraction. *Theory and Practice of Logic Programming*, Volume 23, Issue 4: 2023 International Conference on Logic Programming (ICLP), 2023, pp. 765-781 <https://doi.org/10.1017/S1471068423000297>
- C6. Qixu Gong\* and **Huiping Cao**: Backbone Index to Support Skyline Path Queries over Multi-cost Road Networks. In *Intl. Conf. on Extending Database Technology (EDBT)*. Vol 2, pp. 325-337, 2022. <https://doi.org/10.48786/edbt.2022.19>
- C7. Erick Draayer\*, **Huiping Cao**, Yifan Hao\*: Reevaluating the Change Point Detection Problem with Segment-based Bayesian Online Detection. In *Intl. Conf. on Information and Knowledge Management, CIKM* 2021, pp. 2989-2993. <https://doi.org/10.1145/3459637.3482167>
- C8. Edgar Ceh-Varela\*, **Huiping Cao**, and Tuan Le: Multi-criteria and Review-based Overall Rating Prediction. In *Proc. of the 25th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2021)*, pp. 473-484. [https://doi.org/10.1007/978-3-030-75765-6\\_38](https://doi.org/10.1007/978-3-030-75765-6_38) (Acceptance rate: 20%).
- C9. Edgar Ceh-Varela\* and **Huiping Cao**: Recommending novel and relevant reviews to expand users' knowledge about a product. In *Proc. of IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT)*, pages 195-202, December, 2020. <https://doi.org/10.1109/WIIAT50758.2020.00030>. (Acceptance rate: 25%).
- C10. Yifan Hao\*, **Huiping Cao**, and Erick Draayer\*: CNN Approaches to Classify Multivariate Time Series Using Class-specific Features. In *Proc. of 2020 IEEE International Conference on Smart Data Services (SMDS)*, pages 1-8. (Invited paper) <https://doi.org/10.1109/SMDS49396.2020.00008>
- C11. Yifan Hao\* and **Huiping Cao**: A New Attention Mechanism to Classify Multivariate Time Series. In *Proc. of the Twenty-Ninth International Joint Conference on Artificial Intelligence (IJCAI) Main track*. 2020: 1999-2005. <https://doi.org/10.24963/ijcai.2020/277> (Acceptance rate: 12.6%).
- C12. Qixu Gong\*, Jiefei Liu\*\* and **Huiping Cao**: CSQ System: A System to Support Constrained Skyline Queries on Transportation Networks (Demo paper). In *Proc. of IEEE Intl. Conf. on Data Engineering*

- (ICDE), 2020: 1746-1749.  
<https://doi.org/10.1109/ICDE48307.2020.00160>
- C13. Edgar Ceh-Varela\* and **Huiping Cao**: Recommending Packages of Multi-criteria Items to Groups. In Proc. of IEEE Intl. Conf. on Web Services (ICWS) 2019: 273-282. (Acceptance rate: 18%)  
<https://doi.org/10.1109/ICWS.2019.00054>
- C14. Qixu Gong\*, **Huiping Cao**, Parth Nagarkar: Skyline Queries Constrained by Multi-cost Transportation Networks. In Proc. of IEEE Intl. Conf. on Data Engineering (ICDE), 2019: 926-937. <https://doi.org/10.1109/ICDE.2019.00087>
- C15. Chuan Hu\*, **Huiping Cao**, Qixu Gong\*: Sub-Gibbs Sampling: a New Strategy for Inferring LDA. In Proc. of IEEE Intl. Conf. on Data Mining (ICDM 2017), 907-912. <https://doi.org/10.1109/ICDM.2017.113>. (Overall acceptance rate: 19.9%).
- C16. Chuan Hu\* and **Huiping Cao**: Discovering Time-evolving Influence from Dynamic Heterogeneous Graphs. In Proc. of IEEE International Conference on Big Data 2015, 2253-2262. (Acceptance rate: 42.8%). <http://dx.doi.org/10.1109/BigData.2015.7364014>
- C17. Yifan Hao\*, **Huiping Cao**, Yan Qi, Chuan Hu\*, Sukumar Brahma, and Jingyu Han: Efficient Keyword Search on Graphs using MapReduce. In Proc. of IEEE International Conference on Big Data 2015, 2871-2873. <http://dx.doi.org/10.1109/BigData.2015.7364106>
- C18. James Obert\*, Inna Pivkina, Hong Huang, **Huiping Cao**: Dynamically Differentiated Multipath Security in Fixed Bandwidth Networks. In Military Communications Conference (MILCOM 2014), 88-93. Oct. 6 - 8, 2014. (Acceptance rate: N.A.)  
<http://dx.doi.org/10.1109/MILCOM.2014.22>
- C19. Chuan Hu\*, **Huiping Cao**, Chaomin Ke\*\*: Detecting Influence Relationships from Graphs. Proc. of SIAM Data Mining, SDM 2014:821-829. (Acceptance rate: N.A.)  
<http://dx.doi.org/10.1137/1.9781611973440.94>
- C20. Yangpai Liu\*\*, **Huiping Cao**, Yifan Hao\*, Peng Han, Xinda Zeng\*\*: Discovering Context-aware Influential Objects. In Proc. of SIAM Data Mining, SDM 2012:780-791. (Acceptance rate: 27%)  
<http://siam.omnibooksonline.com/2012datamining/data/papers/237.pdf>
- C21. **Huiping Cao**, K. Selçuk Candan, and Maria Luisa Sapino: Skynets: Searching for Minimum Trees in Graphs with Incomparable Edge Weights. In Proc. of Intl. Conf. on Information and Knowledge Management, CIKM 2011, 1775-1784. (Acceptance rate: 15%)  
<http://dl.acm.org/citation.cfm?doid=2063576.2063833>
- C22. **Huiping Cao**, Shawn Bowers, Mark P. Schildhauer: Approaches for Semantically Annotating and Discovering Scientific Observational Data. In Proc. of Intl. Conf. on Database and Expert System Applications, DEXA 2011, 526-541. (Acceptance rate: 25%)  
<http://www.springerlink.com/content/v56047534m051171/>
- C23. Shawn Bowers, Jay Kudo, **Huiping Cao**, Mark P. Schildhauer: ObsDB: A System for Uniformly Storing and Querying Heterogeneous Observational Data. In Proc. of the IEEE Intl. Conf. on e-Science, 2010, 261-268. (Acceptance rate: 30%)  
<http://www.computer.org/csdl/proceedings/escience/2010/4290/00/4290a261-abs.html>
- C24. **Huiping Cao**, Yan Qi, K. Selçuk Candan, and Maria Luisa Sapino: Feedback-driven result ranking and query refinement for exploring semi-structured data collections. In Proc. of Intl. Conf. on Extending Database Technology, EDBT 2010, 3-14. (Acceptance rate: N.A.)  
<http://dl.acm.org/citation.cfm?doid=1739041.1739046>
- C25. **Huiping Cao**, Yan Qi, K. Selçuk Candan, and Maria Luisa Sapino: Exploring Path Query Results through Relevance Feedback. In Proc. of Intl. Conf. on Information and Knowledge Management, CIKM 2009, 1959-1962. (Acceptance rate: N.A.)  
<http://dl.acm.org/citation.cfm?doid=1645953.1646275>
- C26. K. Selçuk Candan, **Huiping Cao**, Yan Qi, and Maria Luisa Sapino: AlphaSum: Size-Constrained Table Summarization using Value Lattices. In Proc. of Intl. Conf. on Extending Database Technology, EDBT 2009, 96-107. (Acceptance rate: 32.5%)  
<http://dl.acm.org/citation.cfm?doid=1516360.1516373>
- C27. K. Selçuk Candan, **Huiping Cao**, Yan Qi, and Maria Luisa Sapino: Table Summarization with the Help of Domain Lattices. In Proc. of Intl. Conf. on Information and Knowledge Management, CIKM 2008, 1473-1474. (Acceptance rate: 16%)  
<http://dl.acm.org/citation.cfm?doid=1458082.1458340>
- C28. **Huiping Cao**, Nikos Mamoulis, and David W. Cheung: Discovery of Collocation Episodes in Spatiotemporal Data. In Proc. of Intl. Conf. on Data Mining, ICDM 2006, 823-827. (Acceptance rate: 10%) <http://www.computer.org/csdl/proceedings/icdm/2006/2701/00/270100823-abs.html>
- C29. **Huiping Cao**, Nikos Mamoulis, and David W. Cheung: Mining Frequent Spatio-Temporal Sequential

- Patterns. In Proc. of Intl. Conf. on Data Mining, ICDM 2005, 82-89. Received Student Travel award. (Acceptance rate: 13.8%)  
<http://www.computer.org/csdl/proceedings/icdm/2005/2278/00/22780082-abs.html>
- C30. Nikos Mamoulis, **Huiping Cao**, George Kollios, Marios Hadjieleftheriou, Yufei Tao, and David W. Cheung: Mining, Indexing, and Querying Historical Spatiotemporal Data. In ACM SIGKDD Proc. of Intl. Conf. on Knowledge Discovery and Data Mining, SIGKDD 2004, 236-245. (Acceptance rate: 12%)  
<https://doi.org/10.1145/1014052.1014080>
- C31. **Huiping Cao**, David W. Cheung, and Nikos Mamoulis: Discovering Partial Periodic Patterns in Discrete Data Sequences. In Proc. of Pacific-Asia Conf. on Knowledge Discovery and Data Mining, PAKDD 2004, 653-658. (Acceptance rate: 13%)  
[http://link.springer.com/chapter/10.1007%2F978-3-540-24775-3\\_77](http://link.springer.com/chapter/10.1007%2F978-3-540-24775-3_77)
- C32. Yutao Shou, Nikos Mamoulis, **Huiping Cao**, Dimitris Papadias, and David W. Cheung: Evaluation of Iceberg Distance Joins. In Proc. of Intl. Symp. on Advances in Spatial and Temporal Databases, SSTD 2003, 270-288. (Acceptance rate: N.A.)  
[http://link.springer.com/chapter/10.1007%2F978-3-540-45072-6\\_16](http://link.springer.com/chapter/10.1007%2F978-3-540-45072-6_16)

### Refereed and Archived Conference Papers - non-CS venues

- C33. Ramin Zahedi\*, Edgar Ceh-Varela\*, Robert Selje II, Liang Sun, and **Huiping Cao**: Neural Network Based Approaches to Mobile Target Localization and Tracking Using Unmanned Aerial Vehicles. In Proc. of American Institute of Aeronautics and Astronautics (AIAA) SciTech Conference, Orlando, FL, Jan 10-15, 2020. <https://doi.org/10.2514/6.2020-0392>
- C34. Milan Biswal\*, Yifan Hao\*, Phillip Chen, Sukumar Brahma, **Huiping Cao**, and Phillip DeLeon, Signal Features for Classification of Power System Disturbances using PMU Data. In Proc. of 19th Power Systems Computation Conference (PSCC), 20-24 June 2016, Genoa, Italy. (Acceptance rate: N.A.)  
<http://dx.doi.org/10.1109/PSCC.2016.7540867>.
- C35. Michael Brown, Milan Biswal\*, Sukumar Brahma, Satish J Ranade, and **Huiping Cao**, Characterizing and Quantifying Noise in PMU data, Proc. IEEE PES General Meeting, 17-21 July 2016, Boston. (Acceptance rate: N.A.)  
<https://doi.org/10.1109/PESGM.2016.7741972>.
- C36. Om P. Dahal, **Huiping Cao**, Sukumar M. Brahma: Evaluating Performance of Classifiers for Supervisory Protection using Disturbance Data from Phasor Measurement Units. In IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe), 2014: 1-6. Oct. 12-15, 2014. (Acceptance rate: N.A.) <http://dx.doi.org/10.1109/ISGTEurope.2014.7028892>.

### 7.3 Refereed and Archived Workshop Papers

- C37. Ian Goetting\*\*, Elisabeth Baseman, **Huiping Cao**: Causal Relationships amongst Sensors in the Trinity Supercomputer: work in progress. In Proceedings of the First Workshop on Machine Learning for Computing Systems (MLCS). Co-located with The 27th International Symposium on High-Performance Parallel and Distributed Computing (HPDC'18). <https://doi.org/10.1145/3217871.3217875>
- C38. Francisco Natividad\*, Russell Y. Folk, William Yeoh, and **Huiping Cao**: On the Use of Off-the-Shelf Machine Learning Techniques to Predict Energy Demands of Power TAC Consumers. In Proc. of Intl. Workshop on Agent-Mediated Electronic Commerce and Trading Agents Design and Analysis (AMEC/TADA) 2016, pages 112-126. (Acceptance rate: N.A.)  
[https://link.springer.com/chapter/10.1007%2F978-3-319-54229-4\\_8](https://link.springer.com/chapter/10.1007%2F978-3-319-54229-4_8)
- C39. Yifan Hao\*, **Huiping Cao**, Kabi Bhattarai\*, Satyajayant Misra: STK-anonymity: k-anonymity of social networks containing both structural and textual information, In Proc. of DBSocial 2013:19-24, co-located with SIGMOD 2013. (Acceptance rate: N.A.)  
<http://dl.acm.org/citation.cfm?doid=2484702.2484707>
- C40. Shawn Bowers, **Huiping Cao**, Mark Schildhauer, Matt Jones, Ben Leinfelder, and Margaret O'Brien: A Semantic Annotation Framework for Retrieving and Analyzing Observational Datasets. In the third workshop on Exploiting Semantic Annotations in Information Retrieval (ESAIR2010), co-located with Intl. Conf. on Information and Knowledge Management (CIKM), 31-32, 2010. (Acceptance rate: N.A.)  
<http://dl.acm.org/citation.cfm?doid=1871962.1871982>



## 7.4 Refereed, Non-archived Workshop Papers

- C41. Yifan Hao\*, **Huiping Cao**, K. Selçuk Candan, Jiefei Liu\*, and Huiying Chen\*: Class-Specific Attention (CSA) for Time-Series Classification. The 8th SIGKDD International Workshop on Mining and Learning from Time Series (MILETS 2022). Washington DC, August 15, 2022. (Double-blind review) <https://kdd-milets.github.io/milets2022/#papers>

## 7.5 Non-Referred, Archived Papers

- arXiv1. Yifan Hao\*, **Huiping Cao**, K. Selçuk Candan, Jiefei Liu\*, Huiying Chen\*, and Ziwei Ma: Class-Specific Attention (CSA) for Time-Series Classification. <https://arxiv.org/abs/2211.10609>. November, 2022.

## 7.6 Book Chapters

- B1. **Huiping Cao**, Yan Qi, K. Selçuk Candan, and Maria Luisa Sapino: XML Data Integration: Schema Extraction and Mapping. Chapter 14 in Advanced Applications and Structures in XML Processing. Editors: Changqing Li and Tok Wang Ling.
- B2. Yan Qi, **Huiping Cao**, K. Selçuk Candan, and Maria Luisa Sapino: XML Data Integration: Merging, Query Processing and Conflict Resolution. Chapter 15 in Advanced Applications and Structures in XML Processing. Editors: Changqing Li and Tok Wang Ling.
- B3. **Huiping Cao**, Nikos Mamoulis, and David W. Cheung: Periodic Pattern Discovery from Trajectories of Moving Objects. Chapter 15 in Geographic Data Mining and Knowledge Discovery, 2nd Edition. Editors: Harvey J. Miller and Jiawei Han.

## 7.7 Posters and non-archived conference papers

- P1. Eddy J. Figueroa Picon\*, Huiying Chen\*, Andres Perea, Mehmet Emin Bakir, Santiago Utsumi, **Huiping Cao**: Data Rate Optimization for Power-Efficient Animal Behavior Classification: An Examination of Data Collection Frequency on Predicting Animal Behavior using Machine Learning. Presented in Undergraduate poster competition at the 2023 Great Minds in STEM (GMiS) conference, October 11-14, 2023. Pasadena, CA.
- P2. Ly Ly Trieu\*, Derek W. Bailey, **Huiping Cao**, Tran Cao Son, Mark G. Trotter, Lauren O'Connor, Colin T. Tobin: Potential of Accelerometers to Remotely Detect Bovine Ephemeral Fever in Heifers using Pattern Recognition In 2023 American Society of Animal Science (ASAS)-CSAS-WSASAS Annual Meeting, Albuquerque, NM. July 18, 2023.
- P3. Jiefei Liu\*, Derek W. Bailey, **Huiping Cao**, Tran Cao Son, Colin Tobin: Animal Behavior Analysis Using Unsupervised Machine Learning Techniques. In 2023 American Society of Animal Science (ASAS)-CSAS-WSASAS Annual Meeting, Albuquerque, NM. July 18, 2023.
- P4. Huiying Chen\*, Trung Le\*, Sajidur Rahman\*, Shelemia Nyamuryekung'e, Santiago Utsumi, **Huiping Cao**, Matthew McIntosh. Dashboard Development for Real-time Monitoring of Cattle Behavior. In 2022 SRM Annual Meeting, Session "Precision Grazing: State of the Science and Opportunity for User Feedback on New Technologies", February 8, 2022.
- P5. Beepana Pokharel\*, **Huiping Cao**, Wenbin Jiang, Kenneth C Carroll, Yanyan Zhang, and Pei Xu. Quantitative analysis of produced water in Permian Basin-New Mexico using machine learning techniques. AGU Fall meeting, December 1-17, 2020.
- P6. Qixu Gong\*, **Huiping Cao**, Andres Cibils, Shelemia Nyamuryekung'e, Matt McIntosh, and Fatima Continanza. GRAZETOOLS: A Set of Tools for Analyzing Livestock Behavior Using GPS data. AGU Fall meeting, December 1-17, 2020.
- P7. Omar Navarro\*\*, Edgar Ceh-Varela\*, **Huiping Cao**: Analysis of anomaly detection algorithms on electricity consumption time series. In 2020 Emerging Researchers National (ERN) Conference in STEM, February 6-8, 2020.
- P8. Amy Worth\*\*, **Huiping Cao**: Analysis of Traffic Accidents Using Machine Learning Techniques. In 2019 Emerging Researchers National (ERN) Conference in STEM, February 21-23, 2019.
- P9. Panika Valecha\*, **Huiping Cao**, Qixu Gong\*, Mai Zheng, Feng Yan, Xing Lin, Art Harkin: Analysis and Prediction of Storage Error Events for High Performance Computing Systems. In Conference on Data Analysis (CODA) 2018, March 7 - 9, 2018. Santa Fe, New Mexico.

- P10. Josue Gutierrez, Sean Flaherty\*\*, Colby Brungard, **Huiping Cao**, David Dubois, Merrill Bean, Max Bleiweiss: Early Warning Dust Forecasting. In 29th Hispanic Engineering National Achievement Awards Conference (HENAAC) Conference, October 18-21, 2017. Pasadena, CA.
- P11. Stephanie Peña-Rivera\*\*, **Huiping Cao**, Oswald Chong: Reducing Prediction Errors for Abnormal Energy Consumption. In CAHSI Annual Conference, co-located with HENAAC, October 18-21, 2017 in Pasadena, CA.
- P12. Brett Pelkey\*\*, Yifan Hao\*, **Huiping Cao**: Predicting Energy Consumption of Campus Buildings. In 2017 UT Dallas Undergraduate Research Expo In Computer Science, April 14, 2017. (The 1st place).
- P13. Brett Pelkey\*\*, Stefan Ceballos\*\*, Milan Biswal\*, **Huiping Cao**, Sukumar Brahma: *Phasor Measurement Unit Monitoring Tool*, 17th Joint UTEP/NMSU Workshop on Mathematics, Computer Science, and Computational Sciences, El Paso, Texas, November 7, 2015. <http://www.cs.utep.edu/vladik/utepnmsu15.html>.
- P14. A. Al-Ghraibah, Laura E. Boucheron, R. T. James McAteer, **Huiping Cao**, Jason Jackiewicz, Bernie J. McNamara, David G. Voelz, B. Calabro, K. DeGrave, Yifan Hao, Michael Kirk, A. Pevtsov, J. McKeeever, G. Taylor: *Automated Classification of Flaring Behavior in Solar Active Regions: Preliminary Results*, American Astronomical Society (AAS) Annual meeting, Austin, TX, January 10, 2012.
- P15. Yifan Hao\*, **Huiping Cao**, Bernie J. McNamara, Jason Jackiewicz, R. T. James McAteer, Laura E. Boucheron, David G. Voelz,: *Intelligent Search of Solar Data*, American Astronomical Society (AAS) Annual meeting, Austin, TX, January 10, 2012.
- P16. Laura E. Boucheron, A. Al-Ghraibah, R. T. James McAteer, **Huiping Cao**, Jason Jackiewicz, Bernie J. McNamara, David G. Voelz,: *Fields, flares, and forecasts*, AAS Solar Physics Division, AAS/SPD, Las Cruces, NM, June 2011.
- P17. Bernie J. McNamara, Jason Jackiewicz, C. Lovekin, R. T. James McAteer, Laura E. Boucheron, **Huiping Cao**, David G. Voelz, Michael Kirk, G. Taylor, K. DeGrave, A. Al-Graibah, A. Pevtsov: *The Influence of Rotation on the Pulsation Spectra of B-stars*, AAS Solar Physics Division, AAS/SPD, Las Cruces, NM, June 2011.
- P18. Bernie J. McNamara, Jason Jackiewicz, R. T. James McAteer, Laura E. Boucheron, **Huiping Cao**, David G. Voelz, Michael Kirk, G. Taylor, K. DeGrave, A. Al-Graibah, C. Lovekin, A. Pevtsov: *The Pulsation Spectra of Kepler B Stars*, American Astronomical Society (AAS), May 2011.
- P19. M. Schildhauer, L. E. Bermudez, S. Bowers, P. C. Dibner, C. Gries, M. B. Jones, D. L. McGuinness, **Huiping Cao**, S. J. Cox, S. Kelling, C. Lagoze, H. Lapp, J. Madin, *A core observational data model for enhancing the interoperability of ontologically annotated environmental data*, American Geophysical Union (AGU), Fall Meeting 2010, abstract #IN44B-05. <http://adsabs.harvard.edu/abs/2010AGUFMIN44B..05S>

## 8 Grants

### 8.1 Current Grants

- G1. *Project Title*: Equipment: Building AI and Cybersecurity Talent Pathways Through Enriched Student Learning Experiences.  
*Funding Agency and Award Number*: NSF, 2434833.  
*Amount*: 200K  
*Duration*: 8/15/2024 - 7/31/2026  
*Goal*: This project will equip virtual and in-person classrooms with state-of-the-art (SOTA) servers and robots to support education in five key domains: Artificial Intelligence (AI), Machine Learning (ML), Cybersecurity, Human-robot Interaction, and Introductory CS.  
**Role: Co-PI.**
- G2. *Project Title*: Federated Machine Learning for Network Vulnerability Assessment and Monitoring (a subproject of “Analysis Capabilities for Competition, Crisis, and Combat (AC4)”) *Funding Agency and Award Number*: DoD, W911QX23D0009  
*Amount*: 270K  
*Duration*: 1/1/2024 - 12/30/2027  
*Goal*: This project is to design federated learning techniques to monitor network vulnerabilities and securities.  
**Role: PI.**

- G3. *Project Title:* Design Knowledge Enhanced Machine Learning Models for Accurate and Efficient Analysis of Multi-modality Data  
*Funding Agency:* Microsoft Accelerating Foundation Models Research (AFMR)  
*Amount:* \$20,000  
*Duration:* 12/18/2023 - 10/30/2024  
*Goal:* This project's goals are twofold. First, we will design and develop novel neural network models to extract domain knowledge, incorporate domain knowledge and account for multi-modality data in the learning framework to improve learning accuracy and efficiency. Second, we will apply the foundation models in one scientific domain, animal sciences, to generate a knowledge base (KB) and multi-modality datasets in this scientific domain to facilitate future research.  
**Role: PI.**
- G4. *Project Title:* IUCRC Planning Grant New Mexico State University: Center for Aviation Big Data Analytics [ABDA].  
*Funding Agency:* National Science Foundation; CNS-2231654.  
*Amount:* \$20,000  
*Duration:* 03/15/2023 - 02/29/2025  
*Goal:* This project advances research and education through discovery and innovation at the confluence of big data analytics and aviation to promote American prosperity and advance U.S. economic security and develop big data analytics solutions specially designed for the aviation industry to ensure the safety, security, and prosperity of the U.S Aviation Ecosystem.  
**Role: Co-PI.**
- G5. *Project Title:* Testing & Evaluation for Soldier-Device Teaming Compatibility, Vulnerability, and Durability in Emergent Situations (Program Manager: Thomas Stadterman)  
*Funding Agency and Award Number:* DoD, W911NF2220001  
*Amount:* 300K  
*Duration:* 1/15/22 - 10/14/24  
*Goal:* Proposing federated learning based mechanisms for detecting attacks in communication networks. **Role: Co-PI.**
- G6. *Project Title:* Artificial Intelligence for Arid Land Agriculture (AIALA).  
*Funding Agency and Award Number:* National Science Foundation, DGE-2151254.  
*Amount:* \$2,000,000  
*Duration:* 04/15/2022 - 03/31/2027  
*Goal:* The project is to enable the creation of a coordinated graduate training program, called Artificial Intelligence for Arid Land Agriculture (AIALA), to prepare the next generation of scholars and practitioners by teaching graduate students how to bridge the divides between AI and Agriculture for Arid Lands.  
**Role: Co-PI.**
- G7. *Project Title:* Travel: III: Student Travel Support for 2023 ACM International Conference on Web Search and Data Mining (WSDM).  
*Funding Agency:* National Science Foundation; IIS-2245056.  
*Amount:* \$20,000  
*Duration:* 01/01/2023 - 08/31/2025  
*Goal:* This project enables US-based students to attend the 2023 Association of Computing Machinery (ACM) International Conference on Web Search and Data Mining (WSDM, pronounced "wisdom"), which is held in Singapore from February 27 to March 3, 2023.  
**Role: PI.**
- G8. *Project Title:* CREST: Interdisciplinary Center for Research Excellence in Design of Intelligent Technologies for Smartgrids Phase II. (PI: Enrico Pontelli)  
*Funding Agency and Award Number:* National Science Foundation; HDR-1914635  
*Amount:* \$4,998,780 (My portion: about \$300K)  
*Duration:* 02/01/2020 - 01/31/2025  
*Goal:* This project presents an evolution of iCREDITS into its Phase II (iCREDITS-2), which will serve as a conduit of a coordinated academic-national laboratory-industry research and educational program to foster the transformation of electricity distribution feeders into interconnected customer-centric distribution microgrids (CCDMs), and provide the necessary technology and workforce.  
**Role: Co-PI;** Co-lead the subproject "Data-Driven Decision Making", which is one of the four research thrusts in this project.
- G9. *Project Title:* Novel Strategies to Increase Sustainability of Beef Production Systems in the Western United States. (PI: Andres Cibils).

*Funding Agency:* USDA NIFA; Sustainable Agricultural Systems (SAS)-2019-69012-29853.

*Amount:* \$8.9M (My portion: \$154,067)

*Duration:* 08/01/2019 - 07/31/2025.

*Goal:* The project is to enhance the capacity of beef production systems in the western United States to improve water use efficiency, minimize losses associated with climate change, sustain rangeland biodiversity and soil carbon, and enhance socioeconomic resilience of rural communities where ranching and/or large feeding operations are key elements of rural economies.

**Role: Senior Personnel;** Co-lead the effort of managing and analyzing heterogeneous data collected in cattle monitoring.

- G10. *Project Title:* Preparing Highly Qualified Students with Financial Need for Careers in Computing and Cyber-Security through Evidence-Based Educational Practices.

*Funding Agency and Award Number:* National Science Foundation; DUE-1833630

*Amount:* \$3,969,365

*Duration:* 10/01/2018 - 09/30/2025

*Goal:* This project is to develop a scholarship program that prepares academically talented low-income students to enter the computing workforce or advanced studies in computing disciplines.

**Role: PI** (my contribution is about 10%).

## 8.2 Expired Grants

- G<sub>exp</sub>1. *Project Title:* REU Site: BIGData - Big Data Analytics for Cyber-Physical Systems.

*Funding Agency and Award Number:* National Science Foundation, CNS-1950121.

*Amount:* \$404,571

*Duration:* 03/01/2020 - 04/30/2024

*Goal:* This project is a renewal of award 1559723. Its goal is to promote progress of science by introducing big data analytics in Cyber-physical Systems (CPS) to undergraduate students, helping advance the state of art, and preparing them for the future scientific workforce.

**Role: PI.**

- G<sub>exp</sub>2. *Project Title:* Data Analytics Use Case: Intelligent Alarm.

*Funding Agency:* Midcontinent Independent System Operator, Inc. ("MISO")

*Amount:* \$75,000

*Duration:* 05/01/2021 - 05/30/2023

*Goal:* This project will explore data analytics capabilities that enhance decision making in relation to MISO's Market and Reliability functions. In particular, this project works on "Alarm diagnosis and organization" and "Alarm predictive analysis".

**Role: PI.**

- G<sub>exp</sub>3. *Project Title:* RII Track-1: The New Mexico SMART Grid Center: Sustainable, Modular, Adaptive, Resilient, and Transactive. (PI: William Michener).

*Funding Agency and Award Number:* National Science Foundation; OIA-1757207

*Amount:* \$20M (My portion: about \$300K)

*Duration:* 09/15/2018 - 08/31/2023

*Goal:* The center's goal is to develop an integrated research and education program that will support a modern electric grid that is built on the principles of Distributed Feeder Microgrids (DFMs).

**Role: Senior Personnel;** Co-lead the "Creating data-driven adaptive decision-making strategies" subproject, which is one of the four research subprojects in this project.

- G<sub>exp</sub>4. *Project Title:* Explore Computer Science Research (eCSR) in Big Data Analytics at NMSU.

*Funding Agency and Award Number:* Google.

*Amount:* \$18,000 (round 1), \$15,000 (round 2), \$10,000 (round 3)

*Duration:* two rounds: 10/01/2020 - 06/01/2021, 10/01/2021 - 06/01/2022, 10/01/2022 - 06/01/2023

*Goal:* The project is to introduce computer science research to undergraduate students in the southwest region of the state.

**Role: PI.**

- G<sub>exp</sub>5. *Project Title:* Travel: III: Student Travel Support for 2022 ACM International Conference on Web Search and Data Mining (WSDM).

*Funding Agency:* National Science Foundation; IIS-2154473.

*Amount:* \$20,000

*Duration:* 02/01/2022 - 07/31/2023

*Goal:* This project enables US-based students to attend the 2022 Association of Computing Machinery (ACM) International Conference on Web Search and Data Mining (WSDM, pronounced

"wisdom"), which is held in Phoenix, Arizona from February 21 to February 25, 2022.

**Role: PI.**

- G<sub>exp</sub>6. *Project Title:* Workshops for Capacity Building for Research at Minority-Serving Institutions: Infrastructure Research Readiness (CyBR-MSI: IRR) program.

*Funding Agency:* ASEE.

*Amount:* \$3,000

*Duration:* 01/01/2023 - 07/30/2023

*Goal:* The project supports us to attend workshops with the aim of increasing the capacity of research infrastructure at MSIs to produce competitive proposals to NSF CISE Core programs.

**Role: PI.**

- G<sub>exp</sub>7. *Project Title:* De Sal: Using the Energy-Water Nexus to Assess Produced Water Potential in the Permian. (PI: Pei Xu)

*Funding Agency:* Exxon-Mobil Corporation.

*Amount:* \$125,000 per year

*Duration:* 02/03/2020 - 11/30/2021

*Goal:* This project is to identify and assess potential produced water management alternative that could augment local water supplies, decrease reliance of the energy industry on water sourcing, and reduce the environmental risks that can occur during produced water management, use, and disposal.

**Role: Co-PI;** my responsibility is to investigate and apply different regression analysis techniques to analyze produced water (PW) quantity and quality data.

- G<sub>exp</sub>8. *Project Title:* BIGDATA: Collaborative Research: F: Discovering Context-Sensitive Impact in Complex Systems.

*Funding Agency and Award Number:* National Science Foundation; IIS-1633330

*Amount:* \$369,457

*Duration:* 09/01/2016 - 08/31/2020

*Goal:* The project is to design data mining and machine learning models and algorithms to discover context-aware impacts among objects in complex systems.

**Role: NMSU PI.**

- G<sub>exp</sub>9. *Project Title:* iCREDITS: interdisciplinary Center of Research Excellence in Design of Intelligent Technologies for Smartgrids. (PI: Enrico Pontelli)

*Funding Agency and Award Number:* National Science Foundation; HRD-1345232

*Amount:* \$4,999,721 (among which \$701,655 goes to our monitoring subproject)

*Duration:* 02/01/2014 - 07/31/2020

*Goal:* This project is to establish the interdisciplinary Center of Research Excellence in Design of Intelligent Technologies for Smart grids (iCREDITS).

**Role: Senior Personnel;** Co-lead the subproject "Comprehensive Real Time Classification and Localization of Disturbances in Power Systems using Synchronized Measurements", which is one of the four research subprojects of the project.

*Project Website:* <http://icredits.nmsu.edu/>

- G<sub>exp</sub>10. *Project Title:* REU Site: BIGData - Big Data Analytics for Cyber-Physical Systems

*Funding Agency and Award Number:* National Science Foundation (NSF); ACI-1559723

*Amount:* \$359,151

*Duration:* 03/01/2016 - 02/28/2019

*Goal:* This Research Experience for Undergraduate (REU) site is to promote progress of science by introducing big data analytics in Cyber-physical Systems (CPS) to undergraduate students, helping advance the state of art, and preparing them for the future scientific workforce.

**Role: PI.**

*Project Website:* <http://www.cs.nmsu.edu/reu/>

- G<sub>exp</sub>11. *Project Title:* CC\*DNI Engineer: Enabling Research by Optimizing Cyberinfrastructure at NMSU and Beyond. (PI: Norma Grijalva)

*Funding Agency and Award Number:* National Science Foundation; ACI-1541296

*Amount:* \$199,931

*Duration:* 01/01/2016 - 12/31/2017

*Goal:* The Cyber Infrastructure Engineer (CI Engineer) accelerates scientific discovery by bridging the gap between researchers, other CI professionals, and institutional leadership.

**Role: Senior Personnel.**

- G<sub>exp</sub>12. *Project Title:* MRI: Acquisition of an Instrument for Research in Irregularly Parallel Big Data Computation. (PI: Jonathan Cook)

*Funding Agency and Award Number:* National Science Foundation; CNS-1337884

*Amount:* \$224,074

*Duration:* 10/01/2013 - 09/30/2016

*Goal:* This project has acquired a computational instrument that is configured and directed to support research in irregular, mostly graph-based, computations over big data.

**Role:** Co-PI.

*Project Website:* <http://bigdat.nmsu.edu/>

- G<sub>exp</sub> 13. *Project Title:* Classification of Disturbance Data Generated by Phasor Measurement Units for Better Control and Protection of the Power Grid. (PI: Sukumar Brahma)

*Funding Agency and Award Number:* Office of the Vice President for Research, NMSU; Interdisciplinary Research Grant (IRG) 121294

*Amount:* \$38,490

*Duration:* 01/01/2013 - 12/31/2013.

*Goal:* The goal of this proposal is to determine the number of classes that the data stored inside the Phasor Data Concentrator (PDC) can be divided into.

**Role:** Co-PI.

- G<sub>exp</sub> 14. *Project Title:* Efficient and Intelligent Management of Solar Data by Utilizing High-Performance Computing Infrastructure and Semantic Knowledge for Data-Intensive Retrieval and Exploration. (PI: Huiping Cao)

*Funding Agency and Award Number:* Office of the Vice President for Research, NMSU; Interdisciplinary Research Grant (IRG) 111721

*Amount:* \$50,000

*Duration:* 08/15/2011 - 08/14/2012.

*Goal:* The goal of the proposed research is to investigate novel science to attain more efficient and intelligent retrieval, exploration, and visualization of diverse types of the vast amount of solar data available by utilizing semantic knowledge and high-performance computing infrastructure.

**Role:** PI; Co-lead the project with Dr. Jason Jackiewicz (Co-PI; Astronomy, NMSU).

## 9 SERVICE

### 9.1 Service to the University

#### Current Service

- *CS Undergraduate Committee, Chair*, 08/2024 - present
- *CS Research Committee, Chair*, 08/2024 - present
- *CS Department ABET and Assessment Committee, Chair*, 02/2022 - present
- *CS Department Search Committee, Chair*, 07/2024 - present, for a tenure-track faculty position
- *Mentoring two Computer Science junior faculty* (one from Fall 2019 to present, one from Fall 2023 to present)

#### Past Service

- *Master's in Data Analytics Program, Coordinator*, 08/2019 - 08/2024
- *College of Arts and Sciences Awards Committee, Member*, 08/2021 - 05/2023
- *NMSU Faculty Compensation Advisory Committee, Member*, 08/2020 - 03/2023
- *CS Department Graduate Committee, Chair*, 10/15/2018 - 01/30/2022
- *CS Department Search Committee, Chair*
  - 07/2024 - present for a tenure-track faculty position
  - 06/2024 - 07/2024 for a visiting faculty position
  - 10/2022 - 02/2023 for a tenure-track faculty position
  - 09/2021 - 12/2021 for a tenure-track faculty position
  - 10/2019 - 03/2020 for a tenure-track faculty position
  - 10/2018 - 03/2019 for a tenure-track faculty position
- *CS Department Search Committee, Member*
  - 05/2022 - 10/2022 for a visiting faculty position
  - 11/2014 - 03/2015 for a tenure-track faculty position
  - 11/2012 - 03/2013 for a tenure-track faculty position

- *CS Department Service Course Committee, Chair*, 02/2013 - 01/2018
- *CS Department Undergraduate Committee, Member*
  - Coordinate course description for CS 272 and CS 343 (Fall 2020, Fall 2022)
- *CS department publicity committee, Member*, 08/2014 - 01/2018
  - Maintain social media content on Twitter
- *Mentored* one junior faculty in Civil Engineering (10/2022 - 05/2023)
- *Mentored* two junior faculty in Computer Science (one from Fall 2018 to Spring 2023, one from Fall 2020 to Spring 2022)
- *Mentored* one Astronomy junior faculty (08/2019 - 08/2020)

## Student Committees

- *Ph.D. committee member* (22) (in reverse order of the graduation time)  
 Dang Pham (CS, 5/2024 - present), Zeinab Khanjarinezhadjoonegh (CS, 1/2023 - present), Pratyay Kumar (CS, 1/2023 - present, Poom Pianpak (CS, 08/2023 - present), Alireza Ghasempour (ECE, UNM, 5/2/2023 - present), Loc Pham (CS, 11/2023 - present), Fabrizio Scarrone (CS, University of Torino, Italy, 04/2024 - 09/2024), Khaznah Alshammari (CS, 11/2023 - 12/2024), Omid Jafari (CS, 12/7/2022 - 4/25/2023), Tianwen Chen (CSE, HKUST, 8/22/2022), Meenu Ajith (ECE, UNM, 7/11/2022), M. Ashraf Siddiquee (CS, UNM, 6/27/2022), Thanh Nguyen (CS, 1/15/2021 - 6/1/2021), Emmanuel Utreras (CS, 12/14/2017 - 4/12/2021), Jinrui Cao (CS, 07/2019 - 04/2020), Hua Zhong (CS, 4/27/2018 - 11/1/19), Hien Nguyen (CS, 5/4/2018 - 12/6/2018), Quan Do (IDoc, 11/2015 - 11/13/2019), Najah Al-shanableh (IDoc, 04/2014 - 05/2017), James Obert (IDoc, graduated in 05/2015), Yang Zhang (CS, graduated in 10/2015), Ngoc-Hieu Nguyen (CS, graduated in 04/2013).
- *Ph.D. committee member - Dean's representative* (19) (in reverse order of the graduation time)  
 Catherine O'Neil (Physics, 04/2024 - present), Ahsan Jamil (Water Science and Management, 08/2022 - present), Samir Kusmic (Astronomy, 06/2022 - present), Javed Akhtar (Mechanical Engineering, 07/2023 - 11/2023), Shubhasmita Pati (Electrical Engineering, 07/2021 - 04/2023), Bryson Stemock (Astronomy, 07/2021 - present), Hunter Winsor (Plant and Environmental Sciences, 08/2021 - 12/2022), Qisong Hu (Electrical engineering, 01/2020 - 06/2020), Guangwei Wen (Mechanical engineering, 01/2020 - 12/2020), Javier Hernandez Alvidrez (Electrical Engineering, graduated in 07/2018), Raymond Paulino (Mathematics, 01/2014 - 11/4/2016), Qianning Liu (Mathematics, 09/2016 - 12/2016), Ziwei Ma (Mathematics, 05/2016 - 05/2020), Xiaonan Zhu (Mathematics, 05/2016 - 04/2019), Virginia Knight (Biology, 11/2015 - 11/2017), Zheng Wei (Mathematics, graduated in 05/2015), Mohammed Sawalhah (Animal Science, graduated in 04/2013), Richard Dan McClanahan (Electrical Engineering, graduated in 04/2013), Om Dahal (Electrical Engineering, graduated in 01/2014).
- *M.S. committee member* (23) (in reverse order of the graduation time)  
 Aden Dogar (CS, 05/2024), Long Tran (CS, 04/2024), Zheng Wu (CS, 04/2022), Tuan Hiep Tran (CS, 04/2021), Yuan Xu (CS, 07/2018), Yuhao Lan (Biology & CS, 06/2018), Chase Gilbert (CS, 01/2018), Sajal Kumar (CS, 7/2016), Frank Natividad (CS, 5/2016), AmirSaber Sharifi (Computer Science, 12/2014), Bahar Sayoldin (Computer Science, 05/2013), Alexander Fielder (Computer Science, 05/2013), Ranjith Molgu (Computer Science, 11/2013), Karen Carter (Computer Science, 05/2013), Haizhou Wang (Computer Science, 04/2013), Alsbouaya Ali (Computer Science, 12/2012), Chaitanya Vemprala (Computer Science, 01/2012), Chandramouli Rajasekaran (Computer Science, 12/2011), John Esther (Computer Science, 11/2011), Kabi Bhattarai (Computer Science, 11/2011), Ahed A. Elmsallati (Computer Science, 05/2011), Kueiju Kuang (Computer Science, 04/2011), Sireesha Nethikunta (Computer Science, 12/2010).
- *M.S. committee member - Dean's representative* (16) (in reverse order of the graduation time)  
 Behrooz Mosallaei (Electrical Engineering, 7/2024), Trevor Karpinski (Mechanical Engineering, 11/2023), Ahmed Baraka (Mechanical Engineering, 4/2023), Paul Ortiz (Electrical Engineering, 4/2022), Robert Selje (Electrical Engineering, 3/2022), Xia Li (Applied Statistics, 4/2021), Shanta Padhi (Applied Statistics, 10/2020), Junxin Huang (Applied Statistics, 8/2018), Fredrick Ayivor (Mathematics, 8/2016), Wei Wei (Applied Statistics, 12/2015), Phillip Chen (Electrical Engineering, 05/2015), Ruqing Zhang (Industrial Engineering, 11/2014), Ashley Michalenko (Electrical Engineering, 07/2014), Lakshmi Navya Makkapati (Industrial Engineering, 05/2013), Om Dahal (Electrical Engineering, 03/2013), Weizhong Tian (Mathematics, 11/2011).

## 9.2 Service to the Community

### Editorial Board & Journal Organizer

- Associate SIGMOD Information Director (Aug. 2015 - Dec. 2023)
- Associate Editor, SIGMOD 2023 (Oct. 2021 - Dec. 2022)
- Topic editor of the issue on “*Hot Topic: Reducing Operating Times and Complication Rates Through Robot-Assisted Surgery*”, Frontiers in Robotics and AI. (Oct. 2021 - Oct. 2022)
- Member of the editorial board of *Journal on Data Semantics* (JoDS), Publisher: Springer. (Mar. 2011 - Dec. 2021)

### Conference and Workshop Organizer

(Note: the abbreviation names of the conferences are listed at the end of this section.)

- Sponsorship Co-Chair, The WEB conference, Singapore, May 13 - 17, 2024.
- Student travel award Co-Chair, WSDM, Mérida, Yucatán, Mexico, Mar 4 - 8, 2024.
- Student travel award Chair, WSDM, Singapore, Feb. 27 - Mar 3, 2023.
- Sponsorship Co-Chair, WSDM, Arizona, USA, Feb. 21 - 25, 2022.
- Co-Chair, the first workshop on Machine Learning for Computing Systems (MLCS), co-located with HPDC, Tempe, Arizona, USA, June 11, 2018. (Co-organizers: Elisabeth Baseman (Chair) and George Amvrosiadis).
- Tutorial Co-Chair, PAKDD, Singapore, May 11-14, 2020.
- Tutorial Co-Chair, DASFAA, Suzhou, China, Mar 27 - Mar 30, 2017.
- Exhibits Chair, SIGMOD, San Francisco, USA. Jun 26 -Jul 1, 2016.
- Workshops Co-Chair, PAKDD, Auckland, New Zealand. Apr 19 - 22, 2016.
- Proceedings Co-Chair, SIGMOD, Melbourne, Australia. May 31- Jun 4, 2015.
- Web chair, SIGMOD, Salt Lake City, Utah, 2014.
- Web/Information Chair, SIGMOD, Scottsdale, Arizona, USA, May 20-25, 2012.

### Program Committee Member

(Note: the abbreviation names of the conferences are listed at the end of this section.)

- 2025: PVLDB
- 2024: PVLDB, KDD, CIKM (SPC), IEEE Big Data.
- 2023: SIGMOD (SPC), ICDE Demo, IJCAI, KDD, CIKM (SPC), ICMLA, PAKDD
- 2022: PVLDB, IJCAI, AAAI (SPC), SDM, ICDE Demo, KDD, CIKM (SPC)
- 2021: AAAI, SDM, IJCAI, KDD, CIKM
- 2020: PVLDB, AAAI, SDM, ECAI, SIGIR, IJCAI, PAKDD, KDD, HotEdge, CIKM
- 2019: KDD, AAAI, IJCAI, SDM, SIGMOD Demo, PVLDB, DASFAA, ADC
- 2018: KDD, IJCAI, CIKM, CIKM Demo, SIGMOD Demo, DASFAA, ADC
- 2017: CIKM, DASFAA, DEXA, BigCom
- 2016: KDD, SDM, CIKM, KDIR, DATA ANALYTICS
- 2015: KDD, IJCAI, CIKM, SDM, DATA ANALYTICS
- 2014: CIKM, MILCOM, DATA ANALYTICS
- 2013: DATA ANALYTICS
- 2012: ER, DATA ANALYTICS
- 2011: PAKDD
- 2010: The second IEEE Workshop on Information & Software as Services (WISS 2010), co-located with ICDE 2010
- 2009: The SIAM SDM Workshop on Multimedia Data Mining (in conjunction with SDM 2009) The first workshop on Real Time Business Intelligence (RTBI 2009), co-located with the joint International Conferences on Asia-Pacific Web Conference (APWeb) and Web-Age Information Management (WAIM 2009).
- 2008: The sixteenth Annual European Symposium on Algorithms (ESA 2018).

### Journal Referee

- VLDB Journal
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE Transactions on Semiconductor Manufacturing (TSM)
- ACM Transactions on Database Systems (TODS)



- ACM Transactions on Knowledge Discovery in Data (TKDD)
- ACM Transactions on Spatial Algorithms and Systems (TSAS)
- Knowledge and Information Systems (KAIS) Journal
- Springer Data Mining and Knowledge Discovery (DAMI)
- Distributed and Parallel Databases (DAPD)
- WWW Journal
- Journal of Applied Mathematics
- Data & Knowledge Engineering (DKE) Journal
- Geoinformatica Journal
- Book chapters for the book *Post-Mining of Association Rules – Techniques for Effective Knowledge Extraction*. Editors: Yanchang Zhao, Chengqi Zhang, Longbing Cao. Publisher: IGI Global, 2008.

### **Proposal Referee**

- NSF panelist and ad-hoc reviewer, 2024
- NSF panelist, NSF ERC site visit team, 2024
- NSF panelist, 2023
- NSF panelist, 2022
- Proposal reviewer, Marsden Fund Council, New Zealand, 2021
- NSF panelist, 2021
- USDA NIFA panelist, one panel, 2020
- NSF panelist, 2020
- NSF panelist, 2019
- NSF panelist, 2018
- NSF reviewer, 2016
- Proposal reviewer, Israel Science Foundation (ISF), 2015
- NSF panelist, 2015, one NSF IIS panel,
- NSF panelist, 2013, two NSF IIS panels

### **Thesis Referee and P&T dossier evaluation**

- Evaluated numerous P&T dossiers from 2019
- University of Turin, Italy; PhD thesis, 2024
- University of Turin, Italy; PhD thesis, 2019
- University of Turin, Italy; PhD thesis, 2015
- University of Melbourne, Australia; Masters of Philosophy (MPhil) thesis, 2014
- Anna university, Chennai, India; PhD thesis, 2014

### **Student Volunteer**

- IEEE International Conference on Data Mining (ICDM), Dec., 2006.
- IEEE International Conference on Data Mining (ICDM), Nov., 2005.

### **Abbreviations of conference names**

#### **Data mining and knowledge discovery conferences**

- KDD: ACM SIGKDD Conference on Knowledge Discovery and Data Mining
- CIKM: ACM International Conference on Information and Knowledge Management
- SDM: SAIM International Conference on Data Mining
- PAKDD: Pacific-Asia Conference on Knowledge Discovery and Data Mining
- WSDM: ACM International Conference on Web Search and Data Mining
- ICMLA: IEEE International Conference on Machine Learning and Applications

#### **Databases conferences**

- SIGMOD: ACM International Conference on Management of Data
- PVLDB: International Conference on Very Large Data Bases
- ADC: Australasian Database Conference
- DASFAA: International Conference on Database Systems for Advanced Applications

#### **Artificial intelligence conferences**

- IJCAI: International Joint Conference on Artificial Intelligence
- AAAI: AAAI Conference on Artificial Intelligence

### Information retrieval conferences

- SIGIR: International ACM SIGIR (Special Interest Group on Information Retrieval) Conference on Research and Development in Information Retrieval
- KDIR: International Conference on Knowledge Discovery and Information Retrieval

### Conferences in other areas

- HPDC: International Symposium on High-Performance Parallel and Distributed Computing
- ER: International Conference on Conceptual Modeling
- MILCOM: IEEE Military Communications Conference

## 10 OUTREACH

- 04-10/2022, Led the organization of the data analytics competition at CAHSI summit, which is co-located with GMiS - HENAAC Conference, October 5-8 2022, Pasadena, CA.
- 09-10/2021, Led the organization of the data analytics competition at CAHSI summit, which is co-located with GMiS - HENAAC Conference, October 13-14, 2021, Virtual conference.
- Fall 2019, Fall 2020, mentored a Computing Alliance for Hispanic-Serving Institutions (CAHSI) advocate Gabriella Garcia.
- 09-10/2020, Led the organization of the data analytics competition at CAHSI summit, which is co-located with GMiS - HENAAC Conference, September 30 - October 1, 2020, Virtual conference.
- 09/2019, Led the organization of the data science workshop at CAHSI summit, which is co-located with GMiS - HENAAC Conference, September 25 - 29, 2019 Disney's Coronado Springs Resort, Lake Buena Vista, FL.
- 04/14/2016, Presented *5V's of Big Data*, NMSU Spring Salon Discovery.
- 04/15/2015, Presented *The Role of Big Data in Smartgrids: How to Guarantee Reliability and Resilience* (with Dr. Sukumar Brahma) for the Academy for Learning in Retirement, to seniors in Good Samaritan Village, Las Cruces, New Mexico.
- 08/2014 - 10/2015, Initiated and working on a memorandum agreement for an NMSUCS-SEIE dual program between the School of Economic Information Engineering (SEIE), Southwestern University of Finance and Economics, and the Department of Computer Science (CS), College of Arts and Sciences, New Mexico State University.
- 05/2013, Visited two Chinese universities, Southwestern University of Finance and Economics and Nanjing University of Posts and Telecommunications, to enable student recruitment, collaboration, and faculty/student exchanges.

## 11 PRESENTATIONS

- 4/26/2019: CASCADE Workshop/Retreat on Big Data Challenges, Techniques, and Applications, Arizona State University, Tempe, AZ.  
*Big data @ NMSU.*
- 4/26/2019: CASCADE Workshop/Retreat on Big Data Challenges, Techniques, and Applications, Arizona State University, Tempe, AZ.  
*Data-driven Decision Making in Smart Grids.*
- 4/17/2019: Sandia National Lab A4H Field Day, Sandia National Lab, Albuquerque, NM.  
*Data-driven decision making.*
- 1/29/2019, New Mexico Research Spotlight Forum Artificial Intelligence & Machine Learning, Sandia National Lab, Albuquerque, NM.  
*Knowledge discovery and data mining from time series and graph data.*
- 10/18/2017, Dept. of Computer Science, University of New Mexico (UNM), Albuquerque, NM.  
*Designing and Learning Probabilistic Graphical Models for Graph Mining.*
- 04/17/2017, Information School, Renmin University of China (RUC), Beijing, China  
*Influence Discovery from Graph-structured Data.*
- 11/18/2016, Business School, NMSU  
*Techniques for Big Data Analysis.*
- 09/23/2016, Dept. of Computer Science, New Mexico Institute of Mining and Technology (NMT), Socorro, NM  
*Aspect-level Influence Discovery from Graphs.*

- 04/04/2015, 5th Southwest Energy Science and Engineering Symposium.  
*Interdisciplinary Center of Research Excellence in Design of Intelligent Technologies for Smartgrids: Research Agenda* (with Dr. Sukumar Brahma).
- 11/21/2014, Department of Computer Science, University of Texas at El Paso (UTEP).  
*Detecting Influence Relationships from Graphs*.
- 10/04/2013, Annual SACNAS National conference.  
*Database Support for Enabling Data-Discovery Queries Over Semantically-Annotated Observational Data*.
- 05/30/2013, Department of Computer Science & Technology, Nanjing University of Posts and Telecommunications.  
*STK-Anonymity: K-anonymity of Social Networks Containing both Structural and Textual Information*.
- 01/27/2011, Department of Mathematical Sciences, New Mexico State University (NMSU).  
*Feedback-driven Result Ranking and Query Refinement for Exploring Semi-structured Data Collections*.
- 11/12/2010, Department of Computer Science, University of Texas at El Paso (UTEP).  
*Feedback-driven Result Ranking and Query Refinement for Exploring Semi-structured Data Collections*.

## 12 PROFESSIONAL SOCIETY MEMBERSHIP

- Association of Computing Machinery (ACM)