

Jelena Tešić, Ph.D.

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EDUCATION

Ph.D. in Electrical and Computer Engineering, University of California Santa Barbara 01/2000 – 05/2004

Thesis title: Managing Large Multimedia Repositories

M.Sc. in Electrical and Computer Engineering, University of California, Santa Barbara, CA, 09/1998-12/1999

Outstanding Teaching Assistant Award, ECE department, June 1999.

Dipl. Ing. Electrical Engineering, University of Belgrade, Serbia, 10/1993-07/1998

Thesis title: “Noise reduction in CDMA receivers”, GPA: 9.64/10.00, top 1%.

PROFESSIONAL EXPERIENCE

2024- , Associate Professor; 2017-2024, Assistant Professor, Computer Science, Texas State University, TX.

2009-2017, Research Scientist, Mayachitra Inc, Santa Barbara, CA.

2004-2009, Research Staff Member, IBM Watson Research, NY.

RESEARCH FUNDING

- Mylene Farias (PI), **Jelena Tešić (co-PI)**, Sarah Fritts (Supporting), “Advancing the Automation of Bat Monitoring for Sustainable Wind Energy Development, TXST Center for Analytics and Data Science, Texas State University, \$6,000, 2025, Catalyst Award, grant.
- Xiangping Liu (PI), **Jelena Tešić (co-PI)**, “Comprehensive Experiential Learnings to Promote Climate Resilient Agriculture for Under-Represented Minority Students,” USDA NIFA HSI, Federal, \$1,200,000, Oct 2024 – Sep 2028, grant.
- Denise Gobert (PI), Monica Hughes (Co-PI), **Jelena Tešić (co-PI)**, Keri Jackson, Keri (Supporting), “Hospital Readmissions for Persons with Diabetes who Receive Home Health Services: Predictive Model Analysis using Machine-Learning,” Williamson County Foundation Grant, Private / Foundation / Corporate, \$10,000, Nov 2024 – Aug 2026, grant.
- Tahir Ekin, Tahir (Pl), **Jelena Tešić (co-PI)**, Apan Qasem (co-PI), Damian Valles Molina (co-PI), Lucia Summers (co-PI), “Expanding AI Curriculum and Infrastructure at Texas State University to Advance Interdisciplinary Research and Grow a Diverse AI Workforce, NSF Expand AI, Federal, \$400,000, Jan 2024 – Dec 2025, 400K, grant.
- Robert McLean (PI) and **Jelena Tešić (co-PI)**, “Automating Microbial Biofilm Corrosion Analysis Using Semantic Segmentation for Enhanced Space Mission Safety, Texas State University, \$16,000, 2024, grant.
- Feng Wang, Feng (PI), Haitao Gong (Co-PI), **Jelena Tešić (Co-PI)**, Xiaohua Luo, Xiaohua (Co-PI), “Artificial Intelligence for Pavement Condition Assessment from 2D/3D Surface Images, Texas Department of Transportation (TxDOT),” State, \$451,875, Sep 2022- Aug 2025, grant.
- Salah Faroughi (PI), **Jelena Tešić (co-PI)**, John Tiefenbacher, (Co-PI), “ESMs Latent Space Exploration for Uncertainty Quantification and Spatiotemporal Downscaling,” DOE-BER, Federal, \$150,000. Aug 2022 – Jun 2025, grant.
- **Jelena Tešić (PI)**, “Object Cueing Using Biomimetic Approaches to Visual Information Processing,” NAVAIR, Federal, NAVAIR SBIR N14A-T008 AT, \$199,708, March 2021 – March 2023, grant @ TXST; NAVAIR SBIR N14A-T008 P2, \$307,005, March 19, 2018 – March 2021, grant @ TXST; NAVAIR STTR N14A-T008, P1 and P2, \$1,200,000 Oct 2014 – Jan 2018, grant a@ Mayachitra Inc.

PROFESSIONAL ACTIVITIES

7 U.S. PATENTS AWARDED: 12,093,970; 9,710,760; 8,738,695; 8,032,539; 7,958,068; 7,818,329; 7,707,162.

Reviewer for numerous ACM IEEE Elsevier Springer and Cambridge Journals.

Area Chair ACMMM, ACMIMX and ACMMMSys.

Organization ACMMM 2025 Doctoral Symposium, ACM MMSys Associate Chair, ACM ICMR 2027 committee.

Co-Founder, Research Lead, Texas State University Center for Analytics and Data Science (CADS), 2023 – present.

Founder, DataLab@TXST (<https://DataLab12.github.io>), 2018 - present.

IEEE and National Academy of Inventors (NAI) Senior Member

Panelist: NSF CISE/IIS III CRII and SMALL Programs; ACMMM “Diversity in Multimedia Retrieval Research” 2006.

Guest Editor Special Issue on Collaborative Tagging of Multimedia, IEEE Multimedia Magazine, July-Sep 2008.

PUBLICATIONS

Full publication list: <https://scholar.google.com/citations?hl=en&user=jRLy9uoAAAAJ>

Citations>3400, **h-index**: 24, **i-10 index**: 38.

PUBLICATIONS @ TXST - TXST Student authors in italic; IF: impact Factor; IS: Impact Score.

1. *D Biswas, J Tešić* (2025), “MMVAD: A Vision-Language Model for Cross-Domain Video Anomaly Detection with Contrastive Learning and Scale-Adaptive Frame Segmentation,” Elsevier Expert Systems with Applications Journal (IF 7.5)
2. *MMM Rahman, Jelena Tešić* (2025), “Accelerating Vector Search at Scale: BAM-ANN with Batch-Aware Memory-Disk Hybrid Indexing,” 2025 IEEE International Conference on Content-Based Multimedia Indexing (CBMI), Dublin, Ireland.
3. *M Shebaro, L Feng, J Tešić* (2025), ABCD: Algorithm for Balanced Component Discovery in Signed Networks, IEEE Access (IF: 3.6)
4. *M Elizondo, J Yu, D Payan, L Feng, J Tešić* (2025), Novel Considerations in the ML/AI Modeling of Large-Scale Learning Loss, IEEE Access (IF: 3.6)
5. *T Tani, A Scouten, E Ortiz, R McLean, J Tešić* (2025), “Automated Corrosion Identification in Metal Imagery: Traditional vs. Deep Learning,” Advances in Visual Computing. Lecture Notes in Computer Science, vol 15047. Springer, Cham.
6. *H Gong, A Scouten, J Tešić, F Wang* (2025) “Deep Learning Pipeline for Modeling Pavement Cracks with an Imbalanced Dataset (MoPaC)”, TRR: Journal of the Transportation Research Board (IF: 2.1)
7. *D Biswas, J Tešić* (2024), “Domain Adaptation with Contrastive Learning for Object Detection in Satellite Imagery”, IEEE Transactions on Geoscience and Remote Sensing (IF:8.2, IS:10.85).
8. *M Elizondo, D Gobert, J Tešić* (2024), “AI/ML Pipeline for Predicting Diabetic Readmissions from CMS OASIS dataset”, IEEE Big Data Poster (IF:7.2).
9. *MMM Rahman, J Tešić* (2024), “Stratified Graph Indexing for Efficient Search in Deep Descriptor Databases” Springer International Journal of Multimedia Information Retrieval (IF:5.6).
10. *D Biswas, J Tešić* (2024) “Unsupervised Domain Adaptation with Debiased Contrastive Learning and Support-Set Guided Pseudo Labeling for Remote Sensing Images: JSTARS-2023-01182, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (IF: 5.5, IS:5.5)
11. *M. Shebaro, L Nogueira De Moira, J Tešić* (2024) “Improving Association Discovery through Multiview Analysis of Social Networks”, Springer Nature Social Network Analysis and Mining (IF: 2.8, IS:3.5).
12. *T.A. Tani, J Tešić* (2024) “Advancing Retinal Vessel Segmentation with Diversified Deep Convolutional Neural Networks, IEEE Access (IF:3.5).
13. *MMM Rahman, D Biswas, J Tešić* (2024) “Image Deduplication Using Efficient Visual Indexing and Retrieval: Optimizing Storage, Time and Energy for Deep Neural Network Training,” submitted to Springer Signal Image and Video Processing Journal (IF 2.3).
14. *D. Biswas, J Tešić* (2024) “BinaryDNet53: A Lightweight Binarized CNN for Monkeypox Virus Image Classification,” in Springer Signal Image and Video Processing Journal (IF: 2.3).
15. *M. Shebaro, J Tešić* (2023) “Identifying Stable States of Large Signed Graphs,” WWW '23 Companion, ATX (IS:15.6).
16. *H Gong, J Tešić, J Tao, X Luo, F Wang* (2023) “Automated Pavement Crack Detection with Deep Learning Methods: What Are the Main Factors and How to Improve the Performance?”, Transportation Research Record: Journal of the Transportation Research Board (IF: 2.1)
17. *M Elizondo, R Musal, J Yu, J Tešić* (2013) “Long COVID Challenge: Predictive Modeling of Noisy Clinical Tabular Data,” IEEE ICHI, June 2023, Houston, TX (IS:0.6, research ranking medicine:55).
18. *D Biswas, J Tešić* (2022) "Small Object Difficulty (SOD) Modeling for Objects Detection in Satellite Images", In 14th IEEE International Conference on Computational Intelligence and Communication Networks (CICN), virtual.
19. *MMM Rahman, J Tešić* (2022), “Evaluating Deep Feature Approximate Nearest Neighbor Indexing and Search,”

2022 IEEE International Conference on Big Data (Big Data), virtual (IS:4.10).

20. *MMM Rahman, J Tešić* (2022), “Hybrid Approximate Nearest Neighbor Indexing and Search (HANNIS) for Large Descriptor Databases,” 2022 IEEE International Conference on Big Data (Big Data), virtual (IS:4.10).
21. *D Biswas, T Rahman, Z Zong, J Tešić* (2022) “Improving the Energy Efficiency of Real-time DNN Object Detection via Compression, Transfer Learning, and Scale Prediction”, IEEE NAS, Oct 2022, Philadelphia, PA (IS:10.65).
22. A Lommatsch, B Kille, Ö Özgöbek, *Y Zhou, J Tešić* et al. (2022) NewsImages: addressing the depiction gap with an online news dataset for text-image rematching, ACM MM Sys, June 2022, Athleone, Ireland (IS:4.15).
23. *M. Tomasso, L Rusnak, J Tešić* (2022). Advances in Scaling Community Discovery Methods for Large Signed Graph Networks, *Oxford Journal of Complex Networks* Vol. 10, Issue 3, (IF:2.1, IS:2.18).
24. *M Tomasso, L Rusnak, J Tešić* (2022). Cluster Boosting and Data Discovery in Social Networks, Proceedings of the ACM Symposium on Applied Computing (SAC), (IS:1.33).
25. *L Nogueira De Moira, J Tešić* (2021). pytwanalysis: Twitter Data Management and Analysis at Scale, IEEE International Conference on Social Networks Analysis, Management and Security (SNAMS), (IS:0.6).
26. *G Strauch, JJ Lin, J Tešić* (2021). Overhead Projection Approach for Multi-Camera Vessel Activity Recognition, online IEEE Big Data, REU Symposium track (IS:3.64).
27. *G Alabandi, J Tešić, L Rusnak, M Burtscher* (2021). Discovering and balancing fundamental cycles in large, signed graphs, Proceedings of the International Conference for High-Performance Computing (IS:5.2).
28. *L Rusnak, J Tešić* (2021). Characterizing Attitudinal Network Graphs through Frustration Cloud. Springer *Data Mining and Knowledge Discovery*, 35, 2498–2539 (IF:4.8; IS:5.6).
29. *B Ford, A Qasem, J Tešić, Z Zong* (2021) “Migrating Software from x86 to ARM Architecture: An Instruction Prediction Approach”, IEEE NAS (IS:11.8).
30. *A. Magill, LN De Moura, M. Tomasso, M. Elizondo, and J. Tešić* (2020) “Enriching content analysis of tweets using community discovery graph analysis,” Proceedings of the MediaEval 2020 Workshop, volume 2882.
31. *J Tešić, D Tamir, S Neumann, N Rishe, A Kandel*, “Computing with Words in Maritime Piracy and Attack Detection Systems,” International Conference on Human-Computer Interaction, 434-444 (IS:4.11).
32. *N Dunstatter, A Tahsini, M Guirguis, J Tešić*, “Solving Cyber Alert Allocation Markov Games with Deep Reinforcement Learning,” International Conference on Decision and Game Theory for Security, 164-183 (IS:3.3).
33. *H Samimi, J Tešić*, AHH Ngu, “Patient Centric Data Integration for Improved Diagnosis and Risk Prediction,” Heterogeneous Data Management, Polystores, and Analytics for Healthcare, 185-195 (IS:3.22).
34. *DB Heyse, N Warren, J Tešić*, “Identifying maritime vessels at multiple levels of descriptions using deep features,” SPIE Artificial Intelligence and Machine Learning for Multi-Domain Operations (IS:0.49).
35. *T Mauldin, AH Ngu, V Metsis, ME Canby, J Tešić*, Experimentation and analysis of ensemble deep learning in IoT applications, Open Journal of Internet of Things (OJIOT) 5 (1), 133-149, 2019 (IF:2.38).
36. *N Warren, B Garrard, E Staudt, J Tešić*, Transfer learning of deep neural networks for visual collaborative maritime asset identification, IEEE 4th International Conference on Collaboration and Internet, 2018 (IS:0.76).

EXTENDED ABSTRACTS

1. *M. Shebaro, J Tešić* (2023) “Identifying Stable States of Large Signed Graphs,” Sunbelt International Network for Social Network Analysis (IS:0.6).
2. *A Pantoja, E Bilewu, J Tešić* (2021) “Deep Learning Modeling and Vehicle Tracking for Smart City Traffic Alert System,” Bulletin of the American Physical Society (IS:1.6).
3. *L Nogueira De Moira, J Tešić* (2019) “Spread of English Neologisms through Brazilian Portuguese Online Chatter, A Data Science Perspective,” The 8th Hispanic and Luso-Brazilian Linguistics Conference at Arizona State University.