

## Jelena Tešić, Ph.D.

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### EDUCATION

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**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

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**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.**

### FUNDED GRANTS and GIFTS

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- **NSF Expand AI**, Jan 2024 – Dec 2025, 400K, co-PI.
- **TXST REP, 2024**, 16K, co-PI.
- **TxDot**, Sep 2022 - Aug 2025, 500K, co-PI.
- **DoE RDPP**, Sep 2022 - Aug 2024, 150K, co-PI.
- **TXST CHERR**, June 2022 – May 2023, 70KPI.
- **DoD NAVAIR**, Mar 2018 - Mar 2023, 505K, PI.
- **NVIDIA GPU gift**, 2019 and 2022, 8K, PI.
- **IBM gift**, 2020, 20K, co-PI.
- **Private Grant** Sep 2018 – May 2019, 12K, co-PI.
- **DoD STTR P1 P2** Oct 2014 – Jan 2018, 1.2 mil, PI.

### PROFESSIONAL ACTIVITIES

**6 U.S. PATENTS AWARDED: 9,710,760; 8,738,695; 8,032,539; 7,958,068; 7,818,329; and 7,707,162.**

**Area Chair** ACM Multimedia 2019 - , ICAASP, 2023-ICIP 2018-2020, ICME 2018-2019.

**Reviewer** for the IEEE TKDE TGRS PAMI MM, SP, TNN, TMC, and JSTARS journals, Journal of Complex Networks, ACM Multimedia Systems Journal, and numerous Elsevier and Springer Nature journals.

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

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

**IEEE Senior Member**; ACM member

**NSF CISE/IIS III CRII and SMALL panelist** 2019 2020.

**Panelist** on ACM MM "Diversity in Multimedia Retrieval Research" 2006.

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

### ADVISING AND MENTORING

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- **Ph.D. students**: Principal advisor for 6 Ph.D. students (2 defended the dissertation proposals in Jan 2024); Committee member for 4 Ph.D. students; **Master students** thesis advisor for 3 Master students (2 graduated); Honor thesis advisor for 1 undergraduate student.
- **Sponsored research**: 15+ undergraduate and graduate students worked in the Data Lab on the sponsored research through NAVAIR.
- **Mentor**: 10+ independent research projects (3 credit class); 7 undergraduates in NSF REU (2018-2021); 2 undergraduates in TXST SURE (2020-21) programs.
- **K-12**: Lego League coach for middle school; STEM Day lead for elementary school; mentor for 5 high school students in TXST HSMC (2019-20) program and for 2 senior projects for BASIS HS students in Silicon Valley.

## PUBLICATIONS @ TXST

Full list: <https://scholar.google.com/citations?hl=en&user=jRLy9uoAAAAJ>; Citations>3200; h-index: 22; i-10 index: 30; TXST Student authors in *italic*; IF: impact Factor; IS: Impact Score.

### PUBLICATIONS @ TXST

1. *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).
2. *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).
3. *D Biswas, J Tešić* (2024) "Unsupervised Domain Adaptation with Debaised 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)
4. *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:3.54).
5. *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).
6. *M. Shebaro, J Tešić* (2023) "Identifying Stable States of Large Signed Graphs," WWW '23 Companion, ATX (IS:15.6, research ranking in CS:6).
7. *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)
8. *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).
9. *D Biswas, J Tešić* (2022) "Small Object Difficulty (SOD) Modeling for Objects Detection in Satellite Images", In 14<sup>th</sup> IEEE International Conference on Computational Intelligence and Communication Networks (CICN), virtual.
10. *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).
11. *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).
12. *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).
13. *A Lommatzsch, 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).
14. *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).
15. *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) .
16. *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).
17. *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).
18. *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).
19. *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).
20. *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).
21. *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.
22. *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).
23. *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).
24. *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).
  25. *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).
  26. *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).
  27. *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).

## SUBMITTED AND UNDER REVIEW

1. *T.A. Tani, J Tešić* (2024) “Advancing Retinal Vessel Segmentation with Diversified Deep Convolutional Neural Networks”, submitted to IEEE Access (IF:3.5).
2. *T. A. Tani, A. Scouten, E. Ortiz, R. McLean, J Tešić* (2024) “Automated Corrosion Identification in Metal Imagery: Machine vs. Deep Learning,” under review.
3. *M Elizondo, J Tešić* (2024) “Data-Driven Clinical Predicate Importance Analysis,” under review.
4. *M Elizondo, J Yu, D Payan*, Li Feng, *J Tešić* (2024) “Data Driven Learning Intervention: Novel Approach and Case Study,” submitted to SAGE Aera Open (IF 3.5).
5. *M. Shebaro, J Tešić* (2024) “GraphC: Parameter-free Hierarchical Clustering of Signed Graph Networks,” submitted to submitted to IEEE TKDE (IF:8.9).
6. *M. Shebaro, J Tešić* (2024) “Scaling Frustration Index and Corresponding Balanced State Discovery for Real Signed Graphs”, submitted to IEEE Transactions on Big Data (IF:7.2).
7. *M. Shebaro, J Tešić* (2024), “ABCD: Algorithm for Balanced Component Discovery in Signed Networks,” submitted to IEEE Transactions on Network Science and Engineering (IF:6.6).
8. *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).
9. *J Yu, Li Feng, J Tešić* (2024) “Machine Learning Modeling of Teacher Attrition Data,” submitted to SAGE Educational Researcher Journal (IF:5.4).

## 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.