**DEPARTMENT OF COMPUTER SCIENCE & INFORMATION SYSTEMS**

LIST OF RESEARCH PUBLICATIONS IN SCOPUS INDEXED JOURNALS : 01/01/2021 - 31/12/2021

Papers Published by Faculty in Journals

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| 1. | Hemant Rathore, Adithya Samavedhi, Sanjay K Sahay, Mohit Sewak. Robust Malware Detection Models: Learning from Adversarial Attacks and Defenses, Forensic Science International: Digital Investigation, 37, 301183, 2021 (SCI, ImpactFactor=2.395) |
| 2. | T. Dash, S. Chitlangia, A. Ahuja, A. Srinivasan. How to Tell Deep Neural Networks What We Know: A Review of Methods for Inclusion of Domain-Knowledge, arXiv, 2021 (SCIMAGO Q1) |
| 3. | T. Dash, A. Srinivasan, A. Baskar. Inclusion of domain-knowledge into GNNs using mode-directed inverse entailment, arXiv, 2021 (SCIMAGO Q1) |
| 4. | G. Chhablani, A. Sharma, H. Pandey, T. Dash. Superpixel-based domain-knowledge infusion in computer vision, arXiv, 2021 (Others) |
| 5. | T. Dash, S. Chitlangia, A. Ahuja, A. Srinivasan. Incorporating domain knowledge into deep neural networks, arXiv, 2021 (Others) |
| 6. | T. Dash, A. Srinivasan, L. Vig. Incorporating symbolic domain knowledge into graph neural networks, Machine Learning, DOI: 10.1007/s10994-021-05966-z, 110, 1609--1636, 2021 (SCIMAGO Q1) |
| 7. | Rohit Kaushik, Shikhar Jain, Siddhant Jain, T. Dash. Performance evaluation of deep neural networks for forecasting time-series with multiple structural breaks and high volatility, CAAI Transactions on Intelligence Technology, DOI: https://doi.org/10.1049/cit2.12002, n/a, 2021 (SCIMAGO Q1) |
| 8. | Sen Basabdatta Bhattacharya. Book Review: Ranking: The Unwritten Rules of the Social Game We All Play, Frontiers in Psychology, DOI: 10.3389/fpsyg.2021.605886, 12, 776, 2021 |
| 9. | Rohan Mohapatra, Snehanshu Saha, Carlos A. Coello Coello, Anwesh Bhattacharya, Soma S. Dhavala, Sriparna Saha. AdaSwarm: Augmenting gradient-based optimizers in Deep Learning with Swarm Intelligence, IEEE Transactions on Emerging Topics in Computational Intelligence, 2021 (SCIMAGO Q1) |
| 10. | Luckyson Khaidem, S. Saha, Saibal Kar, Archana Mathur, Sriparna Saha. Expert Habitat: A Colonization Conjecture for Exoplanetary Habitability via penalized multi-objective optimization based candidate validation, European Physical Journal-Special Topics, 2021 (SCIMAGO Q2) |
| 11. | Rahul Yedida, Snehanshu Saha. Beginning with machine learning: a comprehensive primer, The European Physical Journal Special Topics, 1--82, 2021 (SCIMAGO Q2) |
| 12. | A. Tambewkar, A. Maiya, Soma. S. Dhavala, S. Saha. Estimation and Applications of Quantiles in Deep Binary Classification, IEEE Transactions on Artificial Intelligence., 2021 (SCIMAGO Q1) |
| 13. | Tejas Prashanth, Snehanshu Saha, Sumedh Basarkod, Suraj Aralihalli, Soma S Dhavala, Sriparna Saha, Raviprasad Aduri. LipGene: Lipschitz continuity guided adaptive learning rates for fast convergence on Microarray Expression Data Sets, IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2021 (SCIMAGO Q1) |
| 14. | Snehanshu Saha, Nagaraj Nithin. Measure or infer? Role of modeling and machine learning in modern astronomy, 2021 (SCIMAGO Q2) |
| 15. | Sudeepa Roy Dey, Archana Mathur, Dayasagar BS, Snehanshu Saha. ALIS: A novel metric in lineage-independent evaluation of scholars, Journal of Information Science, 2021 (SCIMAGO Q1) |
| 16. | Pedro Albuquerque, Tanmay Tulsidas Verlekar, Paulo Lobato Correia, Luís Ducla Soares. A Spatiotemporal Deep Learning Approach for Automatic Pathological Gait Classification, Sensors, DOI: 10.3390/s21186202, 21, 2021 (SCIMAGO Q2) |
| 17. | Pedro Albuquerque, João Pedro Machado, Tanmay Tulsidas Verlekar, Paulo Lobato Correia, Luís Ducla Soares. Remote Gait Type Classification System Using Markerless 2D Video, Diagnostics, DOI: 10.3390/diagnostics11101824, 11, 2021 (Others) |
| 18. | Aditya Challa, Geetika Barman, Sravan Danda, BS Daya Sagar. Band Selection Using Dilation Distances, IEEE Geoscience and Remote Sensing Letters, 2021 (SCIMAGO Q1) |
| 19. | Sravan Danda, Aditya Challa, BS Sagar, Laurent Najman. A tutorial on applications of power watershed optimization to image processing, The European Physical Journal Special Topics, 230, 2337--2361, 2021 (SCIMAGO Q2) |
| 20. | Mohit Sewak, Sanjay K Sahay, Hemant Rathore. DRLDO: A Novel DRL based De-obfuscation System for Defence Against Metamorphic Malware, Defence Science Journal, 71, 1, 55--65, 2021 (SCI, ImpactFactor=0.73) |
| 21. | Trupil Limbasiya, Sanjay K Sahay, Bharath Sridhar. Privacy-Preserving Mutual Authentication and Key Agreement Scheme for Multi-Server Healthcare System, Information Systems Frontiers, 23, 4, 835, 2021 (SCIMAGO Q1, ImpactFactor=6.191) |
| 22. | Hemant Rathore, Sanjay K Sahay, Piyush Nikam, Mohit Sewak. Robust Android Malware Detection System Against Adversarial Attacks Using Q-Learning, Information Systems Frontiers, 23, 4, 867-882, 2021 (SCIMAGO Q1, ImpactFactor=6.191) |
| 23. | Sanjay K Sahay, Nihita Goel, Murtuza Jadliwala, Shambhu Upadhyaya. Advances in Secure Knowledge Management in the Artificial Intelligence Era., Information Systems Frontiers, 23, 4, 807, 2021 (SCIMAGO Q1, ImpactFactor=6.191) |
| 24. | Sougata Sen, David Kotz. VibeRing: Using vibrations from a smart ring as an out-of-band channel for sharing secret keys, Pervasive and Mobile Computing, DOI: https://doi.org/10.1016/j.pmcj.2021.101505, 101505, 2021 (Networks, ImpactFactor=3.453) |

CONFERENCES/WORKSHOPS/SEMINAR ATTENDED/PAPERS PRESENTED : 01/01/2021 - 31/12/2021

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| **i) International** |

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|  | 1. | Hemant Rathore. Designing Adversarial Robust and Explainable Malware Detection System for Android based Smartphones: PhD Forum Abstract, Proceedings of the 20th International Conference on Information Processing in Sensor Networks (co-located with CPS-IoT Week 2021), 412--413, 2021, (Short Paper) (Core A\*) |
|  | 2. | Travis Peters, Timothy J. Pierson, Sougata Sen, Jos\'{e} Camacho, David Kotz. Recurring Verification of Interaction Authenticity within Bluetooth Networks, Proceedings of the 14th ACM Conference on Security and Privacy in Wireless and Mobile Networks, DOI: 10.1145/3448300.3468287, 192–203, 2021, New York, NY, USA |
|  | 3. | Hemant Rathore, Sanjay K Sahay, Jasleen Dhillon, Mohit Sewak. Designing Adversarial Attack and Defence for Robust Android Malware Detection Models, 2021 51st Annual IEEE/IFIP International Conference on Dependable Systems and Networks, 29--32, 2021, (Core A) |
|  | 4. | Atharv Sonwane, Sharad Chitlangia, Tirtharaj Dash, Lovekesh Vig, Gautam Shroff, Ashwin Srinivasan. Using Program Synthesis and Inductive Logic Programming to solve Bongard Problems, 10th International Workshop on Approaches and Applications of Inductive Programming (AAIP), 2021, (Others) |
|  | 5. | Het Shah, Ashwin Vaswani, Tirtharaj Dash, Ramya Hebblaguppe, Ashwin Srinivasan. Empirical Study of Data-Free Iterative Knowledge Distillation, Artificial Neural Networks and Machine Learning -- ICANN, 546--557, 2021, Cham (Core B) |
|  | 6. | T. Dash, A. Srinivasan, L. Vig, A. Roy. Using Domain-Knowledge to Assist Lead Discovery in Early-Stage Drug Design, bioRxiv, DOI: 10.1101/2021.07.09.451519, 2021, (Core B) |
|  | 7. | A. Sharma, H. Pandey, G. Chhablani, Y. Bhartia, T. Dash. {LRG} at {S}em{E}val-2021 Task 4: Improving Reading Comprehension with Abstract Words using Augmentation, Linguistic Features and Voting, Proceedings of the 15th International Workshop on Semantic Evaluation (SemEval-2021), 189--198, 2021, Online (Others) |
|  | 8. | Pranav Mahajan, Advait Rane, Swapna Sasi, Sen Basabdatta Bhattacharya. Quantifying Synchronization in a Biologically Inspired Neural Network, 2021 International Joint Conference on Neural Networks (IJCNN), DOI: 10.1109/IJCNN52387.2021.9533414, 1-6, 2021, |
|  | 9. | Sen Basabdatta Bhattacharya, Teresa Serrano-Gotarredona. On- and Off-centre Pathways in a Retino-Geniculate Spiking Neural Network on SpiNNaker, 2021 10th International IEEE/EMBS Conference on Neural Engineering (NER), DOI: 10.1109/NER49283.2021.9441462, 461-464, 2021, |
|  | 10. | Chinmay Chiplunkar, Nishant Gautam, Ishita Mediratta, Andrew Gait, Sujith Thomas, Andrew Rowley, Teresa Serrano-Gotarredona, Sen Basabdatta Bhattacharya. A Reduced-Scale Cortical Network with Izhikevich's Neurons on SpiNNaker, 2021 International Joint Conference on Neural Networks (IJCNN), DOI: 10.1109/IJCNN52387.2021.9534244, 1-8, 2021, |
|  | 11. | Shriya T.P. Gupta, Pablo Linares-Serrano, Sen Basabdatta Bhattacharya, Teresa Serrano-Gotarredona. Foveal-pit inspired filtering of DVS spike response, 2021 55th Annual Conference on Information Sciences and Systems (CISS), DOI: 10.1109/CISS50987.2021.9400245, 1-6, 2021, |
|  | 12. | Swapna Sasi, Basabdatta Sen Bhattacharya. Study of the thalamocortical dynamics in the visual pathway using in silico model, Bernstein Conference 2021 (Abstract), DOI: 10.12751/nncn.bc2021.p029, P029, 2021, |
|  | 13. | Ajwani RD, Lalan A, Sen Bhattacharya B, Bose J. Sparse Distributed Memory using Spiking Neural Networks on Nengo, Bernstein Conference 2021 (Abstract) ArXiv https://arxiv.org/abs/2109.03111, DOI: 10.12751/nncn.bc2021.p132, P132, 2021, |
|  | 14. | Fahmida N Chowdhury, Galia Marinova, Ella Ciuperca, Basabdatta Sen Bhattacharya, Mary Doyle-Kent. The State of Play in Diversity and Inclusion in STEM – a Review of Empirical Evidence, Focusing on Gender, 20th IFAC Conference on Technology, Culture and International Stability (TECIS), DOI: 10.1016/j.ifacol.2021.10.510, 54, 570-575, 2021, |
|  | 15. | Mahak Kothari, Swapna Sasi, Jun Chen, Elham Zareian, Basabdatta Sen Bhattacharya. Bayesian Optimisation for a Biologically Inspired Population Neural Network, arXiv, DOI: https://arxiv.org/abs/2104.05989, 2021, |
|  | 16. | Snehanshu Saha, Archana Mathur, Aditya Pandey, Harshith Arun Kumar. DiffAct: A Unifying Framework for Activation Functions, 2021 International Joint Conference on Neural Networks (IJCNN), 1--8, 2021, (Core A) |
|  | 17. | Pragnya Sridhar, Deepika Karanji, Swati Sampatrao Gambhire, Sravan Danda, Snehanshu Saha. Semantic Influence Score: Tracing Beautiful Minds Through Knowledge Diffusion and Derivative Works, International Conference on Database and Expert Systems Applications, 106--115, 2021, (Core B) |
|  | 18. | Snigdha Sen, Snehanshu Saha, Pavan Chakraborty, Krishna Pratap Singh. Implementation of Neural Network Regression Model for Faster Redshift Analysis on Cloud-Based Spark Platform, International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, 591--602, 2021, (Core B) |
|  | 19. | Jyotirmoy Sarkar, Santonu Sarkar, Snehanshu Saha, Swagatam Das. d-BTAI: The Dynamic-Binary Tree Based Anomaly Identification Algorithm for Industrial Systems, International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems, 519--532, 2021, (Core B) |
|  | 20. | Soundarya Krishnan, Rishabh Khincha, Neena Goveas. Network Community Analysis Based Enhancement of Online Discussion Forums, CODS COMAD 2021: 8th ACM IKDD CODS and 26th COMADJanuary 2021 Pages 438, DOI: https://doi.org/10.1145/3430984.3431066, 438, 2021, (Poster) |
|  | 21. | Vedant Shah, Anmol Agarwal, Tanmay Tulsidas Verlekar, Raghavendra Singh. Adapting Deep Neural Networks for Pedestrian-Detection to Low-Light Conditions Without Re-Training, Proceedings of the IEEE/CVF International Conference on Computer Vision, 2535--2541, 2021, (Core A\*) |
|  | 22. | Shrehal Bohra, Vinayak Naik, Varun Yeligar. Towards Putting Deep Learning on the Wrist for Accurate Human Activity Recognition, Workshop on Sensing Systems and Applications Using Wrist Worn Smart Devices at IEEE International Conference on Pervasive Computing and Communications, DOI: 10.1109/PerComWorkshops51409.2021.9430979, 2021, Kassel, Germany (Short Paper) (Others, Data Science) |
|  | 23. | Hemant Rathore, Sanjay K Sahay. Towards Robust Android Malware Detection Models using Adversarial Learning, 2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events, 424--425, 2021, (Short Paper) (Core A) |
|  | 24. | Surjya Ghosh, Salma Mandi, Bivas Mitra, Pradipta De. Exploring Smartphone Keyboard Interactions for Experience Sampling Method driven Probe Generation, ACM IUI (Intelligent User Interfaces) IUI '21: 26th International Conference on Intelligent User Interfaces, DOI: 10.1145/3397481.3450669, 133 - 138, 2021, (Short Paper) (Core A, Systems) |
|  | 25. | Hemant Rathore, Sanjay K Sahay, Mohit Sewak. Are Android Malware Detection Models Adversarially Robust?, Proceedings of the 20th International Conference on Information Processing in Sensor Networks, 408--409, 2021, (Poster) (Core A\*) |
|  | 26. | Rakshit Mittal, Rochishnu Banerjee, Dominique Blouin, Soumyadip Bandyopadhyay. Towards an Approach for Translation Validation of Thread-level Parallelizing Transformations using Colored Petri Nets, ICSOFT, DOI: 10.5220/0010581005330541, 533-541, 2021, Paris (Short Paper) (Core B, Systems) |
|  | 27. | Hemant Rathore, Piyush Nikam, Sanjay K Sahay, Mohit Sewak. Identification of Adversarial Android Intents using Reinforcement Learning, 2021 International Joint Conference on Neural Networks (IJCNN), 1--8, 2021, (Core A) |
|  | 28. | Mohit Sewak, Sanjay K Sahay, Hemant Rathore. ADVERSARIALuscator: An Adversarial-DRL based Obfuscator and Metamorphic Malware Swarm Generator, 2021 International Joint Conference on Neural Networks (IJCNN), 1--9, 2021, (Core A) |
|  | 29. | Mohit Sewak, Sanjay K Sahay, Hemant Rathore. LSTM Hyper-Parameter Selection for Malware Detection: Interaction Effects and Hierarchical Selection Approach, 2021 International Joint Conference on Neural Networks (IJCNN), 1--9, 2021, (Core A) |
|  | 30. | Sujith Thomas, Aditya Kapoor, Narayanan Srinivasan. Supervised category learning: When do participants use a partially diagnostic feature?, 43rd Annual Conference of the Cognitive Science Society 2021, 43, 1313--1319, 2021, (Full Paper) (Core A, Data Science) |
|  | 31. | Mohit Sewak, Sanjay K Sahay, Hemant Rathore. Policy-Approximation Based Deep Reinforcement Learning Techniques: An Overview, Information and Communication Technology for Competitive Strategies (ICTCS 2020), 493--507, 2021, (Scopus) |
|  | 32. | Pritam Bhattacharya, Swaroop Ravindra Joshi, Rakshit Mittal, Soumyadip Bandyopadhyay. Virtual CS Education in India: Challenges and Opportunities, International Conference on Best Innovative Teaching Strategies, ICON-BITS 2021, 2021, India (Short Paper) (Others, Theory) |
|  | 33. | Ishita Mediratta, Snehanshu Saha, Shubhad Mathur. LipARELU: ARELU Networks aided by Lipschitz Acceleration, 2021 International Joint Conference on Neural Networks (IJCNN), 1--8, 2021, UK (Full Paper) (Core A, Data Science) |
|  | 34. | Kanchan Jha, Snehanshu Saha, Sriparna Saha. Prediction of Protein-Protein Interactions using Deep Multi-Modal Representations, 2021 International Joint Conference on Neural Networks (IJCNN), 2021, UK (Full Paper) (Core A, Data Science) |
|  | 35. | Arun S Nair, Aboli Vijayan Pai, Biju K Raveendran, Geeta Patil. MOESIL: A Cache Coherency Protocol for Locked Mixed Criticality L1 Data Cache, 2021 IEEE/ACM 25th International Symposium on Distributed Simulation and Real Time Applications (DS-RT), DOI: 10.1109/DS-RT52167.2021.9576135, 1-8, 2021, Valencia/Spain (Full Paper) (Core C, Systems) |
|  | 36. | Rawan Alharbi, Chunlin Feng, Sougata Sen, Jayalakshmi Jain, Josiah Hester, Nabil Alshurafa. HeatSight: Wearable Low-Power Omni Thermal Sensing, ACM International Symposium on Wearable Computers, DOI: 10.1145/3460421.3478811, 2021, (Short Paper) (Core A\*, Systems) |
|  | 37. | Mohit Sewak, Sanjay K Sahay, Hemant Rathore. DRo: A data-scarce mechanism to revolutionize the performance of DL-based Security Systems, 2021 IEEE 46th Conference on Local Computer Networks (LCN), 581--588, 2021, (Core A) |
|  | 38. | Rizwan Parveen, Neena Goveas. Transforming medical resource utilization process to verifiable timed automata models in Cyber-Physical Systems, 18th International Conference on Distributed Computing and Internet Technology, 2021, India (Others, Systems) |
|  | 39. | Jyotiprakash Mishra, Sanjay K Sahay, Hemant Rathore, Lokesh Kumar. Duplicates in the Drebin Dataset and Reduction in the Accuracy of the Malware Detection Models, 26th IEEE Asia-Pacific Conference on Communications (APCC), 161-165, 2021, (Core C) |
|  | 40. | Ankita Dewan, V. M. V. Gunturi, Vinayak Naik, Kousik Dutta. NEAT Activity Detection Using Smartwatch at Low Sampling Frequency, IEEE International Conference on Ubiquitous Intelligence and Computing, 2021, Atlanta, USA (Full Paper) (Core B, Data Science) |
|  | 41. | Surjya Ghosh, Tanaya Guha. Towards Autism Screening through Emotion-guided Eye Gaze Response, IEEE EMBC 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), DOI: 978-1-7281-1178-0/21, 2021, (Full Paper) (Data Science) |
|  | 42. | Tejal Karnavat, Jaskaran Bhatia, Surjya Ghosh, Sougata Sen. Exploring the challenges of using food journaling apps: A case-study with young adults, EAI MobiQuitous 2021 - 18th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services, DOI: To appear, 2021, (Full Paper) (Core B, Systems) |
|  | 43. | Rakshit Mittal, Dominique Blouin, Soumyadip Bandyopadhyay. PNPEq: Verification of Scheduled Conditional Behavior in Embedded Software using Petri Nets, APSEC, 2021, Thaipi (Short Paper) (Core B, Systems) |
|  | 44. | Louella M Colaco, Amol Pai, Biju K Raveendran, Sasikumar Punnekkat. pmcEDF: An Energy Efficient Procrastination Scheduler for Multi-core Mixed Criticality Systems, 23rd IEEE International Conference on High Performance Computing and Communications (HPCC - 2021), 2021, Haikou/Hainan (Short Paper) (Core B, Systems) |