2020 Publications of Faculty in the Department of Electrical & Computer Engineering Portland State University

Compiled by Nate Rose

REFERENCES

[1] Haider Al-Kanan and Fu Li. A simplified accuracy enhancement to the Saleh AM/AM modeling and linearization of solid-state RF power amplifiers. *Electronics*, 9(11):1806, October 2020. Student.

[2] Jonathan Bird. Magnetic gearbox with flux concentration halbach rotors, 2020.

[3] Jorge I. Canales-Verdial, Walt Woods, Christof Teuscher, Marek Osinski, and Payman Zarkesh-Ha. Impact of memristor defects in a neuromorphic radionuclide identification system. In *2020 IEEE International Symposium on Circuits and Systems (ISCAS)*, pages 1–5. IEEE, October 2020. Student.

[4] Hui-Na Chao, Hua-Wei Li, Xiaoyu Song, Tian-Cheng Wang, and Xiao-Wei Li. Evaluating and constraining hardware assertions with absent scenarios. *Journal of Computer Science and Technology*, 35(5):1198–1216, September 2020.

[5] Thomas Clarke, Tylor Slay, Conrad Eustis, and Robert B. Bass. Aggregation of residential water heaters for peak shifting and frequency response services. *IEEE Open Access Journal of Power and Energy*, 7:22–30, January 2020. Student.

[6] David Munoz Constantine, Richard Tymerski, and Garrison Greenwood. Differential evolution optimization of the broken wing butterfly option strategy. *Technology and Investment*, 11(03):23–45, 2020. Student.

[7] S. Daraeizadeh, S. P. Premaratne, N. Khammassi, X. Song, M. Perkowski, and A. Y. Matsuura. Machine-learning-based three-qubit gate design for the Toffoli gate and parity check in transmon systems. *Physical Review A*, 102(1), July 2020. Student.

[8] Peng Gao, Yiwei Li, M. Perkowski, and Xiaoyu Song. Realization of quantum oracles using symmetries of boolean functions. *Quantum Information and Computation*, 20:418–448, 2020. Student.

[9] Garrison W. Greenwood and Daniel Ashlock. Monte Carlo tree search strategies in 2-player iterated prisoner dilemma games. In *2020 IEEE Conference on Games (CoG)*. IEEE, August 2020.

[10] Richard Hammerschlag, Eileen D. McKusick, Namuun Bat, David J. Muehsam, James McNames, and Shamini Jain. Inter-rater agreement of biofield tuning: Testing a novel health assessment procedure. *The Journal of Alternative and Complementary Medicine*, 26(10):911–917, October 2020.

[11] Wenjun Hou and Marek A. Perkowski. Quantum-based algorithm and circuit design for bounded knapsack optimization problem. *Quantum Information Computation*, 20(9&10):766–786, August 2020. Student.

[12] Hailin Huang, Jonathan Z. Bird, Agustin L. Vera, and Ronghai Qu. An axial cycloidal magnetic gear that minimizes the unbalanced radial force. *IEEE Transactions on Magnetics*, 56(7):1–10, July 2020. Student.

[13] Sam Jacobs and Richard Tymerski. Minimal order compensator design for a DC-to-DC power converter. *International Journal of Electrical and Electronics Engineering*, 7(6):1–10, June 2020. Student.

[14] Kevin Jin, Tahsin Saffat, J. Morgan, and M. Perkowski. A polarity-based approach for optimization of multivalued quantum multiplexers with arbitrary single-qubit target gates. *FLAP*, 7:5–28, 2020. Student.

[15] Rasika Joshi and John M Acken. Sneak path characterization in memristor crossbar circuits. *International Journal of Electronics*, pages 1–18, November 2020. Student.

[16] Jeong-In Lee, Kyung-Hun Shin, Sung-Won Seo, Tae-Kyoung Bang, Seung-Ho Shin, Kyong-Hwan Kim, Jonathan Bird, and Jang-Young Choi. Electromagnetic performance analysis and experimental verification considering the end effect of linear magnetic gears using subdomain-based analytical method. *IEEE Transactions on Magnetics*, 57(2):1–5, February 2020.

[17] G. Lemire and B. Pejcinovic. Introduction to the design and simulation of reflectionless filters. In *2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO)*. IEEE, September 2020. Student.

[18] Jie Li, Peter Gerstoft, Martin Siderius, and Jun Fan. Inversion of head waves in ocean acoustic ambient noise. *The Journal of the Acoustical Society of America*, 147(3):1752–1761, March 2020.

[19] Jie Li, Peter Gerstoft, Martin Siderius, and Jun Fan. Virtual head waves in ocean ambient noise: Theory and modeling. *The Journal of the Acoustical Society of America*, 148(6):3836–3848, December 2020.

[20] Peizhao Li, Han Ren, Yixin Gu, Branimir Pejcinovic, and Bayaner Arigong. A second harmonic separation symmetric ports 180° coupler with arbitrary coupling ratio and transparent terminations. In *2020 IEEE/MTT-S International Microwave Symposium (IMS)*, pages 908–911. IEEE, August 2020.

[21] Zhiqiang Li, Wei Zhang, Gaoman Zhang, Juan Dai, Jiajia Hu, Marek Perkowski, and Xiaoyu Song. An extended approach for generating unitary matrices for quantum circuits. *Computers, Materials & Continua*, 62(3):1413–1421, 2020.

[22] Zonghui Li, Hai Wan, Yangdong Deng, Xibin Zhao, Yue Gao, Ming Gu, and Xiaoyu Song. A flattened-priority framework for mixed-criticality systems. *IEEE Transactions on Industrial Electronics*, 67(11):9862–9872, nov 2020.

[23] Zonghui Li, Hai Wan, Yangdong Deng, Xibin Zhao, Yue Gao, Xiaoyu Song, and Ming Gu. Model-based adaptation of mixed-criticality multiservice systems for extreme physical environments. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 39(7):1386–1399, July 2020.

[24] Zonghui Li, Hai Wan, Yangdong Deng, Xibin Zhao, Yue Gao, Xiaoyu Song, and Ming Gu. Time-triggered switch-memory-switch architecture for time-sensitive networking switches. *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 39(1):185–198, January 2020.

[25] John Lipor and Laura Balzano. Clustering quality metrics for subspace clustering. *Pattern Recognition*, 104:107328, August 2020.

[26] John Lipor, David Hong, Yan Shuo Tan, and Laura Balzano. Subspace clustering using ensembles of k-subspaces. *Information and Inference: A Journal of the IMA*, November 2020.

[27] Kevin Marnell, Conrad Eustis, and Robert B. Bass. Resource study of large-scale electric water heater aggregation. *IEEE Open Access Journal of Power and Energy*, 7:82–90, February 2020. Student.

[28] Sina Modaresahmadi, Javad Khalesi, Kang Li, Jonathan Z. Bird, and Wesley B. Williams. Convective heat transfer analysis of a laminated flux focusing magnetic gearbox. *Thermal Science and Engineering Progress*, 18:100552, August 2020.

[29] S. Mohapatra, S. K. Vendra, and M. Chrzanowska-Jeske. Fast buffer count estimation in 3D IC floorplanning. *IEEE Transactions on Circuits and Systems II: Express Briefs*, 68(1):271–275, January 2020. Student.

[30] Clara Mosquera-Lopez, Eric Wan, Mahesh Shastry, Jonathon Folsom, Joseph Leitschuh, John Condon, Uma Rajhbeharrysingh, Andrea Hildebrand, Michelle H. Cameron, and Peter G. Jacobs. Automated detection of real-world falls: Modeled from people with multiple sclerosis. *IEEE Journal of Biomedical and Health Informatics*, pages 1–10, November 2020.

[31] Hoang Nguyen, Peter Banda, Darko Stefanovic, and Christof Teuscher. Reservoir computing with random chemical systems. In *The 2020 Conference on Artificial Life*, pages 491–499. MIT Press, 2020. Student.

[32] Manasseh Obi, Tylor Slay, and Robert Bass. Distributed energy resource aggregation using customer-owned equipment: A review of literature and standards. *Energy Reports*, 6:2358–2369, November 2020. Student.

[33] B. Pejcinovic. Design of rubrics for student outcomes in 2019-2020 ABET criteria. In *2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO)*. IEEE, September 2020.

[34] Branimir Pejcinovic, Melinda Holtzman, and Phillip Wong. Work in progress: Implementing sophomore cornerstone courses in electrical and computer engineering. In *2020 ASEE Virtual Annual Conference Content Access Proceedings*. ASEE Conferences, June 2020.

[35] Marek Perkowski. Inverse problems, constraint satisfaction, reversible logic, invertible logic and grover quantum oracles for practical problems. In *2020 Reversible Computing Conference*, pages 3–32, July 2020.

[36] Zhaowei Qu, Luhan Zhang, Xiaoru Wang, Bingyu Cao, Yueli Li, and Fu Li. KSF-ST: Video captioning based on key semantic frames extraction and spatio-temporal attention mechanism. In *2020 International Wireless Communications and Mobile Computing (IWCMC)*. IEEE, June 2020. Student.

[37] Marly Roncken and Ivan Sutherland. Design and test of high-speed asynchronous circuits. In Jia Di and Scott C. Smith, editors, *Asynchronous Circuit Applications*, chapter 7, pages 113–171. The Institute of Engineering and Technology (IET), London, UK, 2020.

[38] Vrutangkumar V. Shah, James McNames, Graham Harker, Martina Mancini, Patricia Carlson-Kuhta, John G. Nutt, Mahmoud El-Gohary, Carolin Curtze, and Fay B. Horak. Effect of bout length on gait measures in people with and without Parkinson's disease during daily life. *Sensors*, 20(20):5769, October 2020.

[39] Vrutangkumar V. Shah, James McNames, Martina Mancini, Patricia Carlson-Kuhta, John G. Nutt, Mahmoud El-Gohary, Jodi A. Lapidus, Fay B. Horak, and Carolin Curtze. Digital biomarkers of mobility in Parkinson's disease during daily living. *Journal of Parkinson's Disease*, 10(3):1099–1111, July 2020.

[40] Vrutangkumar V. Shah, James McNames, Martina Mancini, Patricia Carlson-Kuhta, Rebecca I. Spain, John G. Nutt, Mahmoud El-Gohary, Carolin Curtze, and Fay B. Horak. Laboratory versus daily life gait characteristics in patients with multiple sclerosis, Parkinson's disease, and matched controls. *Journal of NeuroEngineering and Rehabilitation*, 17(159):1–12, December 2020.

[41] Vrutangkumar V. Shah, James McNames, Martina Mancini, Patricia Carlson-Kuhta, Rebecca I. Spain, John G. Nutt, Mahmoud El-Gohary, Carolin Curtze, and Fay B. Horak. Quantity and quality of gait and turning in people with multiple sclerosis, Parkinson's disease and matched controls during daily living. *Journal of Neurology*, 267(4):1188–1196, January 2020.

[42] W. Sheng and J. Lipor. A novel framework for deep learning from pairwise constraints. In *2020 54th Asilomar Conference on Signals, Systems, and Computers*, 2020. Student.

[43] Mathias Sunardi and Marek Perkowski. Behavior expressions for social and entertainment robots. In *2020 IEEE 50th International Symposium on Multiple-Valued Logic (ISMVL)*, pages 271–278. IEEE, November 2020. Student.

[44] Mohammad M. A. Taha and Christof Teuscher. Approximate memristive in-memory hamming distance circuit. *ACM Journal on Emerging Technologies in Computing Systems*, 16(2):1–14, April 2020. Student.

[45] S.J. Dat Tran and Christof Teuscher. Deep memcapacitive network. In *2020 IEEE 15th International Conference on Nano/Micro Engineered and Molecular System (NEMS)*, pages 200–205. IEEE, September 2020. Student.

[46] Edison Tsai and Marek Perkowski. A quantum algorithm for automata encoding. *Facta universitatis - series: Electronics and Energetics*, 33(2):169–215, March 2020. Student.

[47] M. Mancini P. Carlson-Kuhta J. Nutt M. El-Gohary C. Curtze F. Horak V. Shah, J. McNames. Comparison of gait measures in a clinic and a community setting in people with and without Parkinson's disease. *Movement Disorders*, 35(943):S418, September 2020. Abstract.

[48] Satya K. Vendra and Malgorzata Chrzanowska-Jeske. Carbon nanotube length variation in correlated CNFETs. In *2020 IEEE 20th International Conference on Nanotechnology (IEEE-NANO)*. IEEE, July 2020. Student.

[49] Dong Wang, Yiwei Li, Edison Tsai, Xiaoyu Song, Marek Perkowski, and Han Li. Boolean function decomposition based on Grover algorithm and its simulation using quantum language quipper. In *Artificial Intelligence and Security, 6th International Conference, ICAIS 2020*, pages 582–592, 2020. Student.

[50] Xiaoru Wang, Yueli Li, Zhihong Yu, Fu Li, Heng Zhang, Yali Cai, and Lixian Li. DIM: Adaptively combining user interests mined at different stages based on deformable interest model. *Mathematical Problems in Engineering*, 2020:1–13, May 2020.

[51] Xiaoru Wang, Bing Ma, Zhihong Yu, Fu Li, and Yali Cai. Multi-scale decision network with feature fusion and weighting for few-shot learning. *IEEE Access*, 8:92172–92181, May 2020.

[52] Xiaoru Wang, Peirong Xu, Zhihong Yu, and Fu Li. Image object extraction based on semantic segmentation and label loss. *IEEE Access*, 8:109325–109334, June 2020.

[53] Yan Wang, Jian tao Zhou, Xinyuan Li, and Xiaoyu Song. Effective user preference clustering in web service applications. *The Computer Journal*, 63(11):1633–1643, October 2019.

[54] Zhuowei Wang, Lianglun Cheng, Hao Wang, Wuqing Zhao, and Xiaoyu Song. Energy optimization by software prefetching for task granularity in GPU-based embedded systems. *IEEE Transactions on Industrial Electronics*, 67(6):5120–5131, June 2020.

[55] Ho Yin Wong, Hossein Baninajar, Bertrand Dechant, and Jonathan Bird. Designing a magnetic gear for an electric aircraft drivetrain. In *2020 IEEE Energy Conversion Congress and Exposition (ECCE)*. IEEE, October 2020. Student.

[56] Hao Wu, Xin Chen, Xiaoyu Song, and He Guo. Cost minimization of scheduling scientific workflow applications on clouds. *Concurrency and Computation: Practice and Experience*, 32(5), September 2020.

[57] Siyuan Yan, Xianzhen Yang, Xiao Li, Bruno Jedynak, and Fu Li. A statistical model of FBMC-OQAM signals for predicting spectral regrowth. *International Journal of Electronics Letters*, pages 1–12, March 2020. Student.

[58] Siyuan Yan, Xianzhen Yang, Xiao Li, and Fu Li. Bandwidth extension on spectrum modeling of cross-modulation for dual-band amplification of OFDM signals. *IEEE Transactions on Instrumentation and Measurement*, 69(6):2752–2758, June 2020. Student.

[59] Xianzhen Yang, Siyuan Yan, Xiao Li, and Fu Li. A unified spectrum formulation for OFDM, FBMC, and f-OFDM. *Electronics*, 9(8):1285, August 2020. Student.

[60] Xianzhen Yang, Siyuan Yan, Xiao Li, Qiang Wu, and Fu Li. Spectrum modeling of out-of-band intermodulation for dual-band RF amplifiers in OFDM modulation. *Electronics*, 9(4):691, April 2020. Student.