

Refereed Journal Articles and Conference Proceedings (105)

- (1) T. Peyton and **D. Loveless**, “Single Event Upset Effects on Deep Neural Networks: A Model and Dataset-Level Perspective,” *2025 RADiation and its Effects on Components and Systems Conference (RADECS)*, PE-7L, Antwerp, Belgium, Oct. 2025.
- (2) J. L. Carpenter, T. Peyton, J. M. Hales, A. Ildefonso, D. McMorrow, S. Westfall, J. Lazenby, and **T. D. Loveless**, “A Hierarchical Framework for Classifying Analog Single-Event Transients by Shape,” *IEEE Trans. Nucl. Sci.*, Oct. 2025, doi: 10.1109/TNS.2025.3622955.
- (3) R. Baltazar-Felipe, J. Ermi, H. Hunnicutt, J. Tyler, I. Hudson, B. Himebaugh, D. R. Reising, and **T. D. Loveless**, “Effects of Total Ionizing Dose on Specific Emitter Identification and Authentication of Software-Defined Radios,” *accepted IEEE Trans. Nucl. Sci.*, Oct. 2025.
- (4) I. Hudson, J. L. Carpenter, T. Peyton, J. Kim, J. Ermi, R. Baltazar-Felipe, and **T. D. Loveless**, “Total Ionizing Dose Effects on Clock Systems and Peripheral Modules of the MSP430FR6989,” *2025 IEEE Radiation Effects Data Workshop (REDW) (in conjunction with 2025 NSREC)*, Nashville, TN, 2025.
- (5) J. L. Carpenter, **T. D. Loveless**, J. Kim, J. Pew, R. Young, M. Nour, P. Manos, M. Chambers, H. J. Barnaby, and J. Neuendank, “A Radiation-Hardened-by-Design Wide-Band Operational Amplifier Fabricated in the SkyWater S90LN 90 nm Process,” *submitted to the JRERE*, May 2025.
- (6) S. Westfall, **T. D. Loveless**, J. L. Carpenter, T. Peyton, J. Kim, H. J. Barnaby, J. Neuendank, M. Nour, P. Manos, and M. Chambers, “Built-In Self-Test Measurement of Radiation Effects in the SkyWater S90LN 90 nm Process,” *submitted to the JRERE*, May 2025.
- (7) J. H. Tyler, M. K. M. Fadul, M. R. Hilling, D. R. R. Reising, and **T. D. Loveless**, “Assessing adversarial replay and deep learning-driven attacks on specific emitter identification-based security approaches,” *Springer Nature, Discover Internet of Things*, vol. 4, no. 25, Nov. 2024, doi: 10.1007/s43926-024-00077-2
- (8) D. R. Reising, J. H. . Tyler, M. K. M. Fadul, M. R. Hilling, and **T. D. Loveless**, “Improved RF Fingerprint-based Identity Verification in the Presence of an SEI Mimicking Adversary,” *J. of Cyber Security and Mobility*, vol. 13, no. 05, pp. 887–916, Sep. 2024, doi: 10.13052/jcsm2245-1439.1354.
- (9) M. A Taha, M. M. K., Fadul, J. H. Tyler, J.H., D. R. Reising, and **T. D. Loveless**, “Enhancing internet of things security using entropy-informed RF-DNA fingerprint learning from Gabor-based images,” *EURASIP J. on Info. Security*, 27 (2024). doi:10.1186/s13635-024-00175-2.
- (10) J. L. Carpenter, **T. D. Loveless**, J. Kim, J. Pew, R. Young, M. Nour, P. Manos, M. Chambers, H. J. Barnaby, and J. Neuendank, “Heavy-Ion SET and SEL Response of a Wide-Band Operational Amplifier Fabricated in the Sky Water S90LN 90 nm Process,” *2024 IEEE Radiation Effects Data Workshop (REDW) (in conjunction with 2024 NSREC)*, Ottawa, ON, Canada, 2024, pp. 1-6, doi: 10.1109/REDW61286.2024.10759147.
- (11) J. Kim, **T. D. Loveless**, J. Pew, R. Young, D. Reising, M. Nour, M. Chambers, H. J. Barnaby, and J. Neuendank, “On-Chip Characterization of Random Telegraph Signal Noise in Bulk 90

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- (12) T. Peyton, J. Carpenter, D. Reising, and **T. D. Loveless**, “Classification of Microelectronics Radiation Effects Using Unsupervised Machine Learning,” *2024 IEEE Aerospace Conference*, Big Sky, MT, USA, Mar. 2024, pp. 1-9, doi: 10.1109/AERO58975.2024.10521248.
- (13) M. K. Fadul, D. R. Reising, L. P. Weerasena, **T. D. Loveless**, M. Sartipi, and J. H. Tyler, “Improving RF-DNA Fingerprinting Performance in an Indoor Multipath Environment Using Semi-Supervised Learning,” *IEEE Trans. Inf. Forensics Secur.*, pp. 3194-3209, Jan. 2024, doi: 10.1109/TIFS.2024.3360851.
- (14) A. Mohammed, M. A. Taha, J. Tyler, M. Fadul, D. Reising, and **T. D. Loveless**, “CNN-based Emitter ID-Verification and Rogue Emitter Rejection for IoT Networks using Entropy-Informed RF-DNA Fingerprints,” *MILCOM 2023-2023 IEEE Military Communications Conference (MILCOM)*, Oct. 2023, pp. 377-384.
- (15) J. Neuendank, F. A. Mamun, H. Barnaby, S. Bonaldo, M. Spear, T. Wallace, **D. Loveless**, J. Pew, M. Nour, P. Manos, Z. Giorno, U. Suriono, M. Chambers, and S. Kosier, “TID Effects on Random Telegraph Signals in Bulk 90 nm MOSFET Devices,” *2023 IEEE International Integrated Reliability Workshop (IIRW)*, South Lake Tahoe, CA, USA, 2023, pp. 1-5, doi: 10.1109/IIRW59383.2023.10477707.
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- (17) Cinque Peggs, Tanner Jackson, Ashley Tittlebaugh, Taylor Olp, Joshua Tyler, Donald Reising and **T. Daniel Loveless**, “Preamble-based RF-DNA Fingerprinting Under Varying Temperatures,” *2023 12th Mediterranean Conference on Embedded Computing (MECO)*, Budva, Montenegro, 2023, pp. 1-8, doi: 10.1109/MECO58584.2023.10155035.
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- (19) S. P. Lawrence and **T. D. Loveless**, “System-Level Radiation Effects Modeling using Temporal Fault Trees”, *2023 IEEE Aerospace Conference*, Big Sky, MT, USA, 2023, pp. 1-14, doi: 10.1109/AERO55745.2023.10115664.
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- (22) B. Dean, T. Peyton, J. L. Carpenter, D. Sam, A. Peterson, J. Kim, S. P. Lawrence, M. Fadul, D. R. Reising, and **T. D. Loveless**, "Machine Learning Approaches for Analysis of Total Ionizing Dose in Microelectronics," *2022 22nd European Conference on Radiation and Its Effects on Components and Systems (RADECS)*, Venice, Italy, pp. 1-7, Oct. 2022, doi: 10.1109/RADECS55911.2022.10412523.
- (23) S. P. Lawrence, S. C. Smith, J. M. Cannon, J. L. Carpenter, D. R. Reising, and **T. D. Loveless**, "Effects of Total Ionizing Dose on SRAM Physical Unclonable Functions," *IEEE Trans. Nucl. Sci.*, vol. 69, no. 3, pp. 349-358, Mar. 2022, doi: 10.1109/TNS.2022.3146279.
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- (28) A. J. Wilson, D. R. Reising, R. W. Hay, R. C. Johnson, A. A. Karrar and **T. Daniel Loveless**, "Automated Identification of Electrical Disturbance Waveforms Within an Operational Smart Power Grid," *IEEE Trans. Smart Grid*, vol. 11, no. 5, pp. 4380-4389, Sept. 2020, doi: 10.1109/TSG.2020.2990079.
- (29) E. W. Richards, **T. D. Loveless**, J. S. Kauppila, T. D. Haeffner, W. T. Holman and L. W. Massengill, "Radiation Hardened by Design Subsampling Phase-Locked Loop Techniques in PD-SOI," *IEEE Trans. Nucl. Sci.*, vol. 67, no. 6, pp. 1144-1151, June 2020, doi: 10.1109/TNS.2020.2978167.
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- (33) A. J. Wilson, D. R. Reising and **T. D. Loveless**, "Integration of Matched Filtering within the RF-DNA Fingerprinting Process," *2019 IEEE Global Communications Conference (GLOBECOM)*, Waikoloa, HI, USA, 2019, pp. 1-6, doi: 10.1109/GLOBECOM38437.2019.9014225.
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