

Olivia P. Dizon-Paradis, M.S.

(formerly Olivia P. Paradis)

Ph.D. Candidate in Electrical and Computer Engineering

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RESEARCH INTERESTS

- Applied Artificial Intelligence
- Machine Learning and Deep Learning
- Image Processing and Computer Vision
- Reinforcement Learning and Imitation Learning

EDUCATION

Expected 2024 Ph.D., Electrical and Computer Engineering

University of Florida (UF), Gainesville, FL

Thesis: Investigating the Practicality of Reinforcement Learning Algorithms

Advisor: Damon L. Woodard, Ph.D.

2022

M.S., Electrical and Computer Engineering

University of Florida (UF), Gainesville, FL

2019

B.S., Biomedical and Electrical Engineering

Rensselaer Polytechnic Institute (RPI), Troy, NY

PROFESSIONAL EXPERIENCE

2021 – Present **Graduate Research Assistant, Florida Institute for National Security**

2021 – Present **Artificial Intelligence Scholar, Eric Friedheim Tourism Institute (EFTI)**

2019 – 2022 Graduate Research Assistant, Florida Institute for CyberSecurity (FICS)

2018 Undergraduate Research Assistant, Interdisciplinary Microsystems Group (IMG)

PROFESSIONAL MEMBERSHIPS

2021 – Present Graduate Student Member, Institute of Electrical and Electronics Engineers (IEEE)

2017 – Present Member, Eta Kappa Nu (HKN) Honor Society

2017 – Present Member, Tau Beta Pi (TBP) Honor Society

PUBLICATIONS

Book Chapters

- B2. R. Wilson, O. Dizon-Paradis, D. Capecci, A. Bhandarkar, R. J. Fu, and D. Woodard, *Methods and Theories in AI and ML Approaches*, ch. 13. Kendall Hunt, 1 ed., 2024
- B1. O. Dizon-Paradis, D. Capecci, T. B. Pan, R. J. Fu, and D. Woodard, *Machine Learning in Marketing Research*, ch. 4. Kendall Hunt, 1 ed., 2024

Journal Articles

- J10. P. Ghosh, G. Lee, M. Zhu, O. P. Dizon-Paradis, U. J. Botero, D. L. Woodard, and D. Forte, “Magnifies: Manageable gan image augmentation framework for inspection of electronic systems,” *Journal of Hardware and Systems Security*, Feb. 2024. DOI: [10.1007/s41635-024-00145-7](https://doi.org/10.1007/s41635-024-00145-7)
- J9. R. Wilson, O. P. Dizon-Paradis, D. Forte, and D. L. Woodard, “Secure: A segmentation quality evaluation metric on sem images for reverse engineering on integrated circuits,” *IEEE Access*, vol. 11, p. 137798–137809, 2023. DOI: [10.1109/access.2023.3340618](https://doi.org/10.1109/access.2023.3340618)
- J8. D. S. Koblah, U. J. Botero, S. P. Costello, O. P. Dizon-Paradis, F. Ganji, D. L. Woodard, and D. Forte, “A fast object detection-based framework for via modeling on pcb x-ray ct images,” *ACM Journal on Emerging Technologies in Computing Systems*, vol. 19, p. 1–20, Oct. 2023. DOI: [10.1145/3606948](https://doi.org/10.1145/3606948)
- J7. D. S. Koblah, O. P. Dizon-Paradis, J. Schubeck, U. J. Botero, D. L. Woodard, and D. Forte, “A comprehensive taxonomy of visual printed circuit board defects,” *Journal of Hardware and Systems Security*, vol. 7, p. 25–43, Apr. 2023. DOI: [10.1007/s41635-023-00132-4](https://doi.org/10.1007/s41635-023-00132-4)
- J6. N. Jessurun, O. P. Dizon-Paradis, J. Harrison, S. Ghosh, M. M. Tehranipoor, D. L. Woodard, and N. Asadizanjani, “Fpic: A novel semantic dataset for optical pcb assurance,” *ACM Journal on Emerging Technologies in Computing Systems*, vol. 19, p. 1–21, Apr. 2023. DOI: [10.1145/3588032](https://doi.org/10.1145/3588032)
- J5. D. Koblah, R. Acharya, D. Capecci, O. Dizon-Paradis, S. Tajik, F. Ganji, D. Woodard, and D. Forte, “A survey and perspective on artificial intelligence for security-aware electronic design automation,” *ACM Transactions on Design Automation of Electronic Systems*, vol. 28, p. 1–57, Mar. 2023. DOI: [10.1145/3563391](https://doi.org/10.1145/3563391)
- J4. M. A. Mallaiyan Sathiaselvan, O. P. Paradis, S. Taheri, and N. Asadizanjani, “Why is deep learning challenging for printed circuit board (pcb) component recognition and how can we address it?,” *Cryptography*, vol. 5, p. 9, Mar. 2021. DOI: [10.3390/cryptography5010009](https://doi.org/10.3390/cryptography5010009)
- J3. D. Mehta, H. Lu, O. P. Paradis, M. A. M. S., M. T. Rahman, Y. Iskander, P. Chawla, D. L. Woodard, M. Tehranipoor, and N. Asadizanjani, “The big hack explained: Detection and prevention of pcb supply chain implants,” *ACM Journal on Emerging Technologies in Computing Systems*, vol. 16, p. 1–25, Aug. 2020. DOI: [10.1145/3401980](https://doi.org/10.1145/3401980)

- J2. N. Jessurun, O. Paradis, A. Roberts, and N. Asadizanjani, “Component detection and evaluation framework (cdef): A semantic annotation tool,” *Microscopy and Microanalysis*, vol. 26, p. 1470–1474, July 2020. DOI: [10.1017/s1431927620018243](https://doi.org/10.1017/s1431927620018243)
- J1. N. Varshney, H. Shen, O. Paradis, and N. Asadizanjani, “He-ion beam imaging for accurate hardware trojan detection,” *Microscopy and Microanalysis*, vol. 26, p. 188–190, July 2020. DOI: [10.1017/s1431927620013732](https://doi.org/10.1017/s1431927620013732)

Conference Proceedings

- C8. N. Jessurun, D. Capecchi, O. Dizon-Paradis, D. Woodard, and N. Asadizanjani, “Semi-supervised semantic annotator (s3a): Toward efficient semantic labeling,” in *Proceedings of the 21st Python in Science Conference*, SciPy, SciPy, 2022. DOI: [10.25080/majora-212e5952-001](https://doi.org/10.25080/majora-212e5952-001)
- C7. A. Pasunuri, N. Jessurun, O. P. Dizon-Paradis, and N. Asadizanjani, “A comparison of neural networks for pcb component segmentation,” in *2021 IEEE International Symposium on Hardware Oriented Security and Trust (HOST)*, IEEE, Dec. 2021. DOI: [10.1109/host49136.2021.9702286](https://doi.org/10.1109/host49136.2021.9702286)
- C6. M. A. M. Sathiaselvan, O. P. Paradis, R. Rai, S. V. Pandurangi, M. Y. Vutukuru, S. Taheri, and N. Asadizanjani, “Logo classification and data augmentation techniques for pcb assurance and counterfeit detection,” in *ISTFA 2021: Conference Proceedings from the 47th International Symposium for Testing and Failure Analysis*, ISTFA2021, ASM International, Oct. 2021. DOI: [10.31399/asm.cp.istfa2021p0012](https://doi.org/10.31399/asm.cp.istfa2021p0012)
- C5. O. P. Dizon-Paradis, D. E. Capecchi, N. T. Jessurun, D. L. Woodard, M. M. Tehranipoor, and N. Asadizanjani, “Framework for automatic pcb marking detection and recognition for hardware assurance,” in *Government Microcircuit Applications and Critical Technology Conference (GOMACTech) 2021*, arXiv, 2023. DOI: [10.48550/ARXIV.2307.13105](https://doi.org/10.48550/ARXIV.2307.13105)
- C4. N. T. Jessurun, O. P. Dizon-Paradis, M. Tehranipoor, and N. Asadizanjani, “Shade: Automated refinement of pcb component estimates using detected shadows,” in *2020 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, IEEE, Dec. 2020. DOI: [10.1109/paine49178.2020.9337564](https://doi.org/10.1109/paine49178.2020.9337564)
- C3. O. P. Paradis, N. T. Jessurun, M. Tehranipoor, and N. Asadizanjani, “Color normalization for robust automatic bill of materials generation and visual inspection of pcbs,” in *ISTFA 2020: Papers Accepted for the Planned 46th International Symposium for Testing and Failure Analysis*, ISTFA2020, ASM International, Dec. 2020. DOI: [10.31399/asm.cp.istfa2020p0172](https://doi.org/10.31399/asm.cp.istfa2020p0172)
- C2. O. P. Dizon-Paradis, N. Varshney, M. T. Rahman, M. Strizich, H. Shen, and N. Asadizanjani, “In-situ thickness measurement of die silicon using voltage imaging for hardware assurance,” in *Government Microcircuit Applications and Critical Technology Conference (GOMACTech) 2020*, arXiv, 2023. DOI: [10.48550/ARXIV.2307.13118](https://doi.org/10.48550/ARXIV.2307.13118)
- C1. N. Vashista, M. T. Rahman, O. P. Dizon-Paradis, and N. Asadizanjani, “Is backside the new backdoor in modern socs?,” in *2019 IEEE International Test Conference (ITC)*, IEEE, Nov. 2019. DOI: [10.1109/itc44170.2019.9000127](https://doi.org/10.1109/itc44170.2019.9000127)

Patents and Disclosures

- P3. N. Asadi-Zanjani, N. Jessurun, S. Ghosh, M. Tehranipoor, D. L. Woodard, O. P. Dizon-Paradis, and J. Harrison, "PCB optical database," 5 2023
- P2. N. Asadi-Zanjani, N. Jessurun, M. Tehranipoor, and O. P. Paradis, "Techniques for printed circuit board component detection," 2 2021. [US11520967B2](#)
- P1. M. Tehranipoor, N. Asadi-Zanjani, O. P. Paradis, and N. Varshney, "Hardware deprocessing using voltage imaging for hardware assurance," 2 2021. [US20210264082A1](#)

Informally Published Works

- X3. O. Dizon-Paradis, S. Wormald, D. Capecci, A. Bhandarkar, and D. Woodard, "Investigating the practicality of existing reinforcement learning algorithms: A performance comparison." DOI: [10.36227/techrxiv.23739099.v1](#), July 2023
- X2. D. Mehta, J. True, O. P. Dizon-Paradis, N. Jessurun, D. L. Woodard, N. Asadizanjani, and M. Tehranipoor, "Fics pcb x-ray: A dataset for automated printed circuit board inter-layers inspection." <https://eprint.iacr.org/2022/924>, 2022
- X1. H. Lu, D. Mehta, O. Paradis, N. Asadizanjani, M. Tehranipoor, and D. L. Woodard, "Fics-pcb: A multi-modal image dataset for automated printed circuit board visual inspection." <https://eprint.iacr.org/2020/366>, 2020

TEACHING

Content Creator, Florida Institute for National Security, UF

Expected 2024 IC SEM Reverse Engineering Tutorial using Artificial Intelligence

Co-Instructor, CPET Pre-College Scholars Program, UF

Su'22 How Do Computers Add?

Graduate Teaching Assistant, UF

F'20 Image Processing and Computer Vision (EEE 6512)

Undergraduate Teaching Assistant, RPI

S'18, F'18, S'19 Electronic Instrumentation (ENGR 4300)

S'17, S'19 Introduction to Cellular and Molecular Biology (BIOL 2120)

S'19 Beginning Programming for Engineers (CSCI 1190)

F'18 Electric Circuits (ECSE 2010)

S'18 Computer Science I (CSCI 1100)

LEADERSHIP, SERVICE, AND VOLUNTEERING

Reviewer Activities

2024	IEEE Int'l. Symposium on the Physical and Failure Analysis of ICs (IPFA)
2023	University of Florida Journal of Undergraduate Research (UF JUR)
2023	Int'l. Council on Hotel, Restaurant, and Institutional Education Conf. (ICHRIE)
2023	Scientific Computing with Python Conf. (SciPy)
2020	BMVA British Machine Vision Conf. (BMVC)
2020	IEEE/CVF Conf. on Computer Vision and Pattern Recognition (CVPR)

Student Organization Activities

2021 – 2023	Graduate Peer Mentor, ECE Graduate Student Wellness Group, UF
2021 – 2023	Graduate Curriculum Chair, Eta Kappa Nu (HKN), UF
2021 – 2023	Vice President, CyberGatorz Student Org., UF
2021 – 2022	Treasurer, Graduate Society of Women Engineers (SWE), UF
2021 – 2022	Representative, Engineering Graduate Student Council (EGSC), UF
2020 – 2021	Tutoring Chair, Eta Kappa Nu (HKN), UF
2019 – 2021	Industry Outreach Chair, ECE Graduate Student Org., UF

HONORS, AWARDS, AND SCHOLARSHIPS

2019 – Present	Grad. School Preeminence Award , UF Electrical and Computer Engr. Dept.
2024	Emerging Scholar Honorable Mention Award, UF Association for Academic Women
2023	Anette Cornwell Bauer Scholarship, Inspiring Women Leaders Conference
2020 – 2021	Gwin Graduate Award in Electrical Engineering, UF
2019	Wynant James Williams Prize, RPI Electrical Engineering Department
2015 – 2019	Rensselaer Leadership Scholarship, RPI
2015 – 2019	Rensselaer Merit Scholarship, RPI

PROFESSIONAL CERTIFICATIONS

2022	Great Teaching Certificate, UF
2022	Great Online Teaching Certificate, UF
2022	Center for Integration of Research, Teaching and Learning (CIRTL) Associate

2021 Machine Learning Graduate Certificate, UF Electrical and Computer Engr. Dept.
2021 Engineering Innovation Graduate Certificate, UF College of Engineering

[CV compiled for the Madelyn Lockhart Dissertation Fellowship application]

May 13, 2024