Olivia P. Dizon-Paradis, M.S.

(formerly Olivia P. Paradis)
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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

Journal Articles

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, pp. 1–20, Oct. 2023. DOI: 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*, Apr. 2023. DOI: 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, pp. 1–21, Apr. 2023. DOI: 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, pp. 1–57, Mar. 2023. DOI: 10.1145/3563391

J4. M. A. M. Sathiaseelan, 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

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," *ACM Journal on Emerging Technologies in Computing Systems*, vol. 16, pp. 1–25, Aug. 2020. DOI: 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, pp. 1470–1474, July 2020. DOI: 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, pp. 188–190, July 2020. DOI: 10.1017/s1431927620013732

Conference Proceedings

C8. N. Jessurun, D. Capecci, O. Dizon-Paradis, D. Woodard, and N. Asadizanjani, "Semi-supervised semantic annotator (s3a): Toward efficient semantic labeling," in *Proceedings of the Python in Science Conference*, SciPy, 2022. DOI: 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 Sym-*

posium on Hardware Oriented Security and Trust (HOST), IEEE, Dec. 2021. DOI: 10.1109/host49136.2021.9702286

C6. M. A. M. Sathiaseelan, 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 *International Symposium for Testing and Failure Analysis*, ASM International, Oct. 2021. DOI: 10.31399/asm.cp.istfa2021p0012

C5. O. P. Dizon-Paradis, D. E. Capecci, N. T. Jessurun, D. L. Woodard, M. M. Tehranipoor, and N. Asadizanjani, "Framework for automatic pcb marking detection and recognition for hardware assurance," in *2021 Government Microcircuit Applications & Critical Technology Conference (GOMACTech)*, arXiv, 2023. DOI: 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

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 *International Symposium for Testing and Failure Analysis*, ASM International, Dec. 2020. DOI: 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 *2020 Government Microcircuit Applications & Critical Technology Conference (GOMACTech)*, arXiv, 2023. DOI: 10.48550/ARXIV.2307.13118

C1. N. Vashistha, M. T. Rahman, O. P. Dizon-Paradis, and N. Asadizanjani, "Is backside the new backdoor in modern SoCs?: Invited paper," in *2019 IEEE International Test Conference (ITC)*, IEEE, Nov. 2019. DOI: [10.1109/itc44170.2019.9000127](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](US11520967B2)

P1. M. Tehranipoor, N. Asadi-Zanjani, O. P. Paradis, and N. Varshney, "Hardware deprocessing using voltage imaging for hardware assurance," 2 2021. [US20210264082A1](US20210264082A1)

Informally Published Works

X4. 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

X3. 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." DOI: [10.21203/rs.3.rs-2697879/v1](10.21203/rs.3.rs-2697879/v1), Mar. 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." Link: 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." Link: https://eprint.iacr.org/2020/366, 2020

TEACHING

Content Creator, Florida Institute for National Security, University of Florida

Expected 2024	IC SEM Reverse Engineering Tutorial using Artificial Intelligence

Co-Instructor, CPET Pre-College Scholars Program, University of Florida

Su'22	How Do Computers Add?

Graduate Teaching Assistant, University of Florida

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

Undergraduate Teaching Assistant, Rensselaer Polytechnic Institute

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

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 – Present	**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	**Graduate School Preeminence Award Fellowship**, University of Florida
2023	Anette Cornwell Bauer Scholarship, Inspiring Women Leaders Conference
2020 – 2021	Gwin Graduate Award in Electrical Engineering, University of Florida
2019	Wynant James Williams Prize, Rensselaer Polytechnic Institute
2015 – 2019	Rensselaer Leadership Scholarship, Rensselaer Polytechnic Institute
2015 – 2019	Rensselaer Merit Scholarship, Rensselaer Polytechnic Institute

Professional Certifications

2022	Great Teaching Certificate, University of Florida
2022	Great Online Teaching Certificate, University of Florida
2022	Center for Integration of Research, Teaching and Learning (CIRTL) Associate
2021	Machine Learning Graduate Certificate, University of Florida
2021	Engineering Innovation Graduate Certificate, University of Florida

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