

Dominic Simon

(407) 497-6425 • dominic.simon@ufl.edu • github.com/dominic-simon • linkedin.com/in/dom-simon/

PROFESSIONAL PROFILE

Doctoral Candidate in Computer Engineering at the University of Florida, with research interests spanning computer vision, language modeling, adversarial robustness, and knowledge editing. Author of **10 peer-reviewed publications**, including three first-author papers and publications at **IJCAI, ICML, and DAC**. Actively seeking **R&D roles in AI/ML** across industry, research laboratories, and federal agencies.

EDUCATION

Ph.D. Computer Engineering Projected August 2026
University of Florida *Gainesville, FL • Aug 2024 - Aug 2026*
University of Central Florida *Orlando, FL • Jan 2022 - Aug 2024*

- Dissertation: “Knowledge Editing Beyond Factual Recall: Methods for Reasoning, Open-Ended Responses, and Multi-Modal Understanding”
- Advisor: Dr. Rickard Ewetz
- GPA: 3.89

M.S. Computer Engineering May 2024
University of Central Florida *Orlando, FL • Jan 2024 - May 2024*

- GPA: 3.93

B.S. Computer Engineering December 2021
University of Central Florida *Orlando, FL • Aug 2017 - Dec 2021*

- GPA: 3.43

SKILLS

AI Development: Python, PyTorch, HuggingFace, Slurm

AI Architectures: Language Transformers, Vision Transformers, Convolutional Neural Networks

AI Systems: Knowledge Editing, Explainable AI (XAI), Adversarial Robustness, RAG, PeFT

RESEARCH EXPERIENCE

Doctoral Research
University of Florida *Gainesville, FL • Aug 2024 - Aug 2026*
University of Central Florida *Orlando, FL • Jan 2022 - Aug 2024*

- Developed the PATCHOUT explainable AI-based adversarial defense, which detects 95% of adversarial images and improves the adversarial image recovery rate by 20%.
- Participated in the Defense Advanced Research Projects Agency (DARPA)-led Guaranteeing AI Robustness Against Deception (GARD) program, a closed competition against industry and university research labs to design adversarial defenses for real-world scenarios.
- Designed CHECK, an efficient method for updating language model knowledge with Retrieval Augmented Generation approaches, improving question-answering accuracy by 22%.

LEADERSHIP

Student Research Mentoring
University of Florida *Gainesville, FL • Aug 2024 - Aug 2026*
University of Central Florida *Orlando, FL • Jan 2022 - Aug 2024*

- Designed and supervised B.S. and M.S. research projects, guiding 7 students through the design, execution, and analysis of 6 projects.
- Instructed students on effective research visualization and presentation skills

PUBLICATIONS

Research Focus

My current work investigates parameter-efficient knowledge updating in large language models, enabling targeted modification of model knowledge while minimizing computational overhead and retraining costs.

Peer-Reviewed Conference Papers:

- 10 (*Under Review*) **Dominic Simon** and Rickard Ewetz, “Beyond Single Edits: Rethinking Knowledge Editing Evaluation with Multi-Edit Entities and Undirected Probing.” *Association for Computational Linguistics Rolling Review*.
- [9] **Dominic Simon** and Rickard Ewetz, “Knowledge Editing for Multi-hop Question Answering using Semantic Analysis,” *International Joint Conference on Artificial Intelligence (IJCAI)*, 2025.
- [8] William English, **Dominic Simon**, Sumit Jha, and Rickard Ewetz, “Grammar-Forced Translation of Natural Language to Temporal Logic using LLMs,” *International Conference on Machine Learning (ICML)*, 2025.
- [7] **Dominic Simon**, Chase Walker, Sumit Jha, and Rickard Ewetz, “Detecting and Removing Adversarial Patches using Frequency Signatures,” *International Joint Conference on Neural Networks (IJCNN)*, 2025.
- [6] Chase Walker, **Dominic Simon**, Kenny Chen, and Rickard Ewetz, “Attribution Quality Metrics with Magnitude Alignment,” *International Joint Conference on Artificial Intelligence (IJCAI)*, 2024.
- [5] Muhammad Rashedul Haq Rashed, Sven Thijssen, **Dominic Simon**, Sumit Jha, and Rickard Ewetz, “Execution Sequence Optimization for Processing In-Memory using Parallel Data Preparation,” *Design Automation Conference (DAC)*, 2024.
- [4] William English, **Dominic Simon**, Rubel Ahmed, Sumit Jha, and Rickard Ewetz, “Neuro-Symbolic Program Synthesis for Multi-Hop Natural Language Navigation,” *International Conference on Assured Autonomy (ICAA)*, 2024.
- [3] William English, **Dominic Simon**, Sumit Jha, and Rickard Ewetz, “NSP: A Neuro-Symbolic Natural Language Navigational Planner,” *International Conference on Machine Learning and Application (ICMLA)*, 2024.
- [2] Mykola Maslych, Difeng Yu, Amirpouya Ghasemaghaei, Yahya Hmaiti, Esteban Segarra, Martinez, **Dominic Simon**, Eugene M. Taranta, Joanna Bergstrom, and Joesph J. LaViola, “From Research to Practice: Survey and Taxonomy of Object Selection in Consumer VR Applications,” *International Symposium on Mixed and Augmented Reality (ISMAR)*, 2024.
- [1] Chase Walker, **Dominic Simon**, Sumit Jha, and Rickard Ewetz, “Adversarial Pixel and Patch Detection Using Attribution Analysis,” *IEEE Military Communications Conference (MILCOM)*, 2023.

Peer-Reviewed Journal Articles:

- [2] (*Under Review*) **Dominic Simon**, Chase Walker, William English, and Rickard Ewetz, “Question Decomposition using Masked Language Modeling for Knowledge Editing,” *Neural Networks*.
- [1] **Dominic Simon**, Sumit Jha, and Rickard Ewetz, “PATCHOUT: Adversarial Patch Detection Using Semantic Consistency,” *Neural Processing Letters*, June 2025.