

Warforge: Redefining Cyber Training Through Advanced Innovation

Stylianos Karagiannis
Postdoctoral Researcher



WARFORGE: ADVANCED INNOVATION

INDUSTRY-STANDARD COMPETITORS



IMPACT-BASED SCORING SYSTEM

Evaluates operational consequences of actions rather than simple right/wrong task completion.



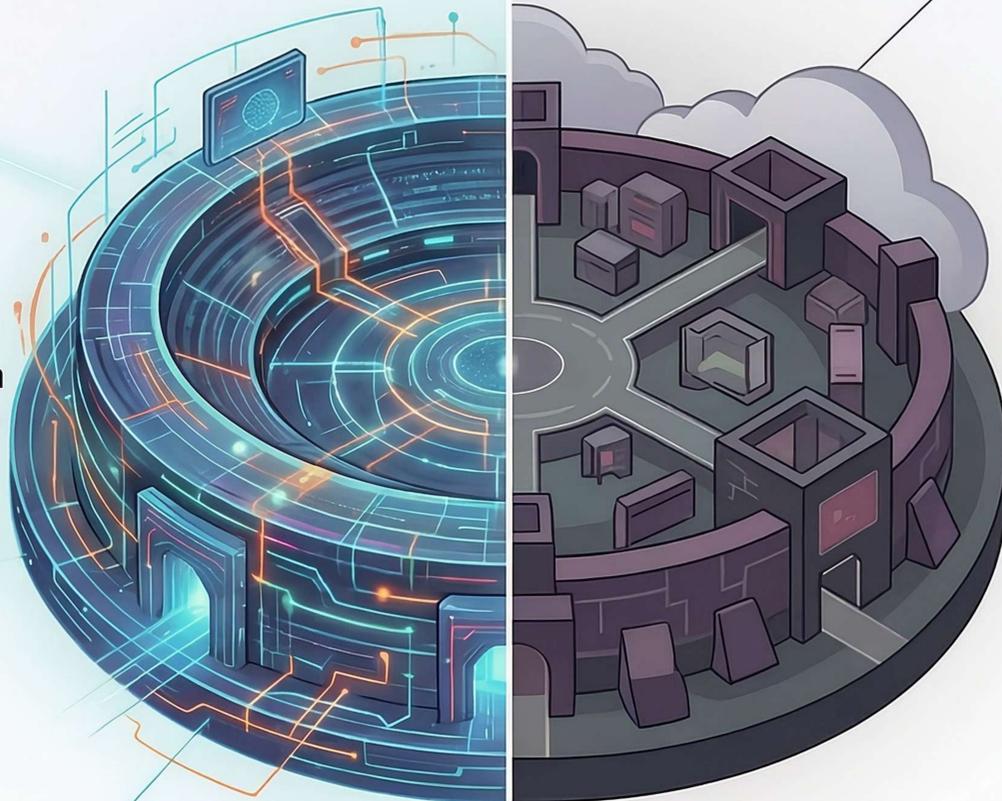
AI TUTOR AS ACTIVE GAME MASTER

Provides **adaptive guidance** and **pedagogical feedback** tailored to the learner's real-time performance.



AI-DRIVEN DYNAMIC SCENARIO ORCHESTRATION

Scenarios evolve in real-time based on user actions, creating unique, non-static learning paths.

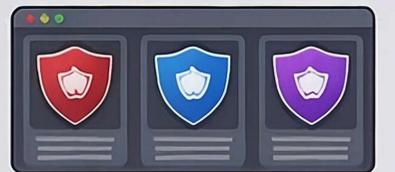


LOCAL AND HYBRID DEPLOYMENT FREEDOM



Unlike major cloud-only competitors, Warforge offers **full on-premise functionality** for high-security environments.

STRUCTURAL "GAMIFICATION BY DESIGN"



Uses deep **narrative-driven missions** and **role-based gameplay** (Red/Blue/Purple) to ensure operational readiness.

WARFORGE VS. INDUSTRY LEADERS: FEATURE SUPERIORITY

Feature	Warforge Advantage	HackTheBox/TryHackMe/Immersive Labs
Scoring	Impact-Based (Dynamic)	Static Flag-Based/Task-Based
Scenario Flow	AI-Driven Adaptive	Static/Fixed Paths / Fixed Modules
AI Support	Active AI Game Master	None / Basic Automated Hints
Deployment	Hybrid & On-Premise	Cloud Only

Latest Research

- **Red vs. Blue Team Training Scenarios for 5G/6G Networks** – International Conference on Availability, Reliability and Security, 2025
- **An Intelligent Network Fuzzer for Protocol Testing in Healthcare Systems** – International Conference on Availability, Reliability and Security, 2025
- **Swarm-intelligence for the modern ICT ecosystems** – International Journal of Information Security, 23(4), 2024
- **NITRO: an interconnected 5G-IoT cyber range** – Proceedings of the 19th International Conference on Availability, 2024
- **AI-powered penetration testing using Shennina: from simulation to validation** – Proceedings of the 19th International Conference on Availability, 2024
- **Mastering data privacy: leveraging K-anonymity for robust health data sharing** – International Journal of Information Security, 23(3), 2024
- **Towards NICE-by-design cybersecurity learning environments: A cyber range for SOC teams** – Journal of Network and Systems Management, 32(2), 2024
- **Adversarial AI attack detection: a novel approach using explainable AI and deception mechanisms** – Smart Cities International Conference (SCIC) Proceedings, 2024
- **A 5G-IoT Cyber Range Platform with Integrated Learning Modules**, IEEE-CSR Conference 2026 submitted