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Digital Entanglements: A Quantum Field View of Cybersecurity

Dr. Boris Loza
PhD
Adjunct Professor, College of Engineering, Capitol Technology University, Laurel, Maryland, USA

Abstract: *For more than a century, quantum physics has transformed our view of the universe, yet its most profound concepts - superposition, entanglement, uncertainty, and locality remain largely confined to the realms of physics and computing.*
In this article, I introduce a fresh way to think about cybersecurity by borrowing those very concepts to build what I call the Quantum Cyber Threat Prediction and Response Engine (Q-CTPRE). Rather than tracking a single attack path, Q-CTPRE treats every possible threat as coexisting until evidence forces a choice. It links distant events in real time, forecasts the adversary's next move, and even "rewinds" to seal earlier weaknesses.

Keywords: Quantum Filed Theory (QFT), Cybersecurity, Threat Field, Superposition, Entanglement, Locality, Observation and Collapse, Path Integrals, Renormalization, Time Symmetry

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