Mélik Lemariey

37 years old

father of two children

Reverse Engineering Specialist Focusing on Complex Systems

As a reverse engineering specialist focusing on complex systems, my expertise lies in understanding and dissecting complex technologies to uncover their inner workings. I specialize in vulnerability identification, exploring potential improvements, and extracting valuable insights from existing systems. In addition to my technical proficiency, I possess strong listening skills and an ability to identify opportunities, allowing me to pinpoint areas where reverse engineering can be effectively applied, whether it's enhancing security, optimizing performance, or discovering potential innovations. By combining my reverse engineering skills with my opportunity-spotting capabilities, I can bring valuable knowledge and solutions to various industries and domains. Whether it's defense, technology, or any other field with complex systems, I can identify areas where my expertise can make a significant impact.

Professional Experience

Doctoral Project

Research Project Title: "Integrative Analysis of Sustainable and Resilient Development: A Cross-Disciplinary Approach to Economics, Thermodynamics, Blockchain Technologies, and Monetary Policies"

This research project aims to explore the interactions between economics, thermodynamics, blockchain technologies, and monetary policies in the context of sustainable and resilient development. In a national and international context where the pressure to adopt sustainable-friendly policies is increasing, there are still obstacles to their effective implementation. Traditional economic analysis often neglects the physical constraints and limitations imposed by thermodynamics when evaluating monetary and economic policies. However, blockchain technologies offer interesting opportunities to improve transparency, traceability, and trust in economic and monetary systems.

Independent Consultant Since 2018

As an independent consultant, I have embraced the motto "If no one does it, do it yourself," which encapsulates my adventurous journey. This endeavor has not only allowed me to establish valuable connections but also expanded my professional network to the point where I now have the ear of government advisors. Through in-depth reverse engineering of blockchain technologies, encompassing private, public, centralized, decentralized, permissioned systems, and directed acyclic graph structures, I have discovered the potential to design a secure and dematerialized monetary means applicable to any monetary system (euro, dollar, yen, etc.). These achievements have been made possible by approaching the issue through the lens of thermodynamics, providing a unique perspective on economics. My journey as an independent consultant has been ongoing since 2018 and continues to thrive.

Technical Director at RF Laboratory – Econocom - syntec 3.1 2015 - 2018

As the technical director of the laboratory, I embarked on an incredible adventure in the field of cybersecurity. This journey provided numerous opportunities to contribute to budget frameworks for category A fundraising. Following a successful fundraising campaign, our focus shifted to finding a suitable location capable of accommodating 50 consultants and experts in compliance with prevailing standards. Once the ideal premises were secured, the excitement of welcoming our new collaborators was truly exhilarating. In my role, I had the privilege of overseeing the RF and connected object security laboratory. This establishment allowed us to conduct in-depth studies on the security of a wide range of connected devices communicating via radio waves. Our expertise also led us to explore the field of small flying technologies, with a focus on studying remote control possibilities and deactivation without resorting to jamming techniques. Our work in this area attracted the attention of various industries, including high finance, healthcare, defense, and equipment manufacturers. As a result, we had the honor of being featured multiple times on news channels. While our efforts revealed numerous zero-day vulnerabilities, the sensitive nature of this information prevents me from providing further details. Rest assured, our team remains dedicated to strengthening security measures and preserving confidentiality.

Independent Electronic Warfare Consultant 2013 - 2015

I offered my services to various defense and arms groups, particularly in the field of communication intelligence and signal intelligence. I worked on securing communications between ground-to-space interfaces for satellite links. One notable organization to which I provided my services was the Association des Vieux Corbeaux, whose members possess a deep understanding of electronic warfare and related technologies.

French Army - 785th Electronic Warfare Company - Non-Commissioned Officer 2008 - 2013

Decorations Received:

- National Defense Medal, Bronze
- Overseas Operations Support
- NATO ISAF (International Security Assistance Force) Medal, Non-Article 5
- French Commemorative Medal, Afghanistan clasp • Accreditation - Upon Request

During my service, I held the rank of non-commissioned officer specializing in electromagnetic intelligence within the Experimental Section - Radio and Satellite Beams Cell, specifically in a non-cooperative context. Towards the end of my tenure, I was recommended for promotion to the rank of Master Sergeant, and my attainment of a Master's degree with distinction was recognized by my superiors, considering me as a potential candidate for an officer position due to my qualifications. My work involved reverse engineering error correction codes implemented on operational satellites and microwave links. This included analyzing and understanding various types of error correction codes such as block codes, convolutional encoders, turbo codes, and low-density parity-check codes. I conducted in-depth analysis of transmission signals from hundreds of geostationary satellites to assess transmission security and adequacy of encryption measures. To enhance the efficiency of my work, I developed software tools for signal analysis and transmission parameter identification using brute-force techniques. This software proved essential in expediting my tasks and contributed to my rapid progression within the experimental section.

RF reconnaissance tours were conducted in multiple countries in a non-cooperative context as part of support for joint forces engaged in interagency missions. The goal of these missions was to ensure communication security in hostile environments and provide crucial intelligence for military operations. RF reconnaissance tours involve monitoring and analyzing radio signals present in a specific geographic area. This includes detecting, identifying, and analyzing the radio frequencies used by different actors on the ground, whether military forces, armed groups, or potentially hostile entities. The objective is to understand the RF environment in which special forces operate to ensure communication security and obtain insights into enemy activities. In a non-cooperative context, these missions can be particularly complex and demanding. Special forces must operate in dangerous and unstable environments, where communications may face intentional interference or jamming attempts. RF reconnaissance tours help identify potential threats to communications and take measures to counter them.

Education

2011-2012 Master's Research Degree in Telecommunications Systems at the University of Rennes 1 - With highest honors and unanimous commendations from the jury.

2009-2011 Continuing Education in Mathematics and Physics at SUPELEC.

2009 École des Transmissions - Rennes and Laval Campus - Signal and Communication Intelligence, Electronic Warfare Specialist.

2008 École nationale des sous-officiers d'active - Saint-Maixent l'École - General training for non-commissioned officers, commando training, assistant shooting instructor: FAMAS, PA MAC 50, AT4CS, ANF1, .50 caliber US machine gun, assistant close combat instructor.

2005-2007 Continuing Education in Mathematics and Physics at the University of Rouen.

2005 - Baccalauréat (High School Diploma) in Science and Technology, Electronics specialization.

Interests

I am part of the LeHack team, a hacker convention formerly known as Nuit du Hack. Alongside my friends, we developed the fascinating Spying Challenge, which can be found at spyingchallenge.com. This challenge is designed to test participants' skills in three distinct phases: open-source intelligence (OSINT) and social engineering, shadowing and physical intrusion. During the competition, participants face various challenges and compete to progress to the next stage. At the end of each phase, participants must submit detailed reports describing the information they have gathered and the actions they have taken. These reports are carefully analyzed by organizers, who use them to determine team rankings. Outside of my involvement with LeHack, I have a great passion for running, especially alongside my faithful running companion, my beagle. The combination of staying active and spending time outdoors brings joy and fulfillment to my free time.