Simone Raponi

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EXPERIENCE

Jul. 2023 - Ongoing [FULL REMOTE, IT]   **REDHOTCYBER**
Technical Writer
Creator of dozens of informative articles related to Cybersecurity and AI.

Jun. 2023 - Ongoing [FLORENCE/HYBRID, IT]   **EQUIXLY**
Cybersecurity Machine Learning Engineer
Responsible for the AI division in Equixly.

Apr. 2023 [FULL REMOTE]   **PACKT**
Technical Reviewer
Reviewer of the book: 10 Machine Learning Blueprints you should know for Cybersecurity.

Mar. 2023 - Jun. 2023 [ROME, IT]   **DEAS -- DIFESA E ANALISI SISTEMI**
Senior Machine Learning Engineer

Jan. 2023 - Ongoing [REMOTE]
Co-Founder and Technical Contributor
The Illustrated Machine Learning Website (https://illustrated-machine-learning.github.io/).

Jul. 2021- Mar. 2023 [LA SPEZIA, IT]   **NATO-STO CENTER FOR MARITIME RESEARCH AND EXPERIMENTATION (CMRE)**
Machine Learning Scientist
Development of Encoder-Decoder Seq2Seq models with RNNs (LSTMs) to forecast vessel trajectories using AIS data as main contributor of the PROMENADE European project.

Mar. 2021 - Apr. 2021 [DOHA, QA]   **IBERDROLA INNOVATION MIDDLE EAST**
Machine Learning Scientist Intern
Development of synchronous distributed data acquisition algorithms for geographically distant PLC devices.
Creation of rich databases about communication delay of PLC devices adopted worldwide.

Jun. 2019 - Aug. 2019 [DOHA, QA]   **IBERDROLA INNOVATION MIDDLE EAST**
Machine Learning Scientist Intern
Development of AI-driven noise forecasting models (LSTM) for Power Line Communication devices.

Jul. 2018 - Aug. 2018 [BARCELONA, SP]   **TELEFONICA RESEARCH**
Machine Learning and Big Data Scientist Intern
Analysis and Experimentation of AI's impact on the privacy of users while interacting with Internet services.

Jan. 2018 - Apr. 2021   **HAMAD BIN KHALIFA UNIVERSITY**
Teaching Assistant
TA for the courses "*Security Risk Analysis*", "*Multimedia Security*", "*Distributed Systems Security*", "*Computer Engineering Winter Program*", "*Open Source Intelligence in Cyberspace*".
Delivery of frontal lessons, creation and grading of exams, projects, and labs.

EDUCATION

Jan. 2018 - Apr. 2021 [DOHA, QA]   HAMAD BIN KHALIFA UNIVERSITY
Ph.D. in Computer Science and Engineering
    Awards: **Best Ph.D. in Computer Science and Engineering**.
    Thesis: AI-driven Detection of Cybersecurity-related Patterns.
    Outcomes: 1 book, 11 Int. conference papers, 10 Int. journal papers, 2 patents, 1 encyclopedia entry.
    Granted funds of ~ $120.000.

Jan. 2016 - Oct. 2017 [ROME, IT]   SAPIENZA UNIVERSITY OF ROME
Master's Degree in Computer Science
    Thesis: Geographical De-anonymization of Crowds in the Dark Web.

    Final Mark: 110/110 summa cum laude.

    Publication of thesis dissertation to IEEE International Conference on Distributed Computing Systems.

    Publication of thesis dissertation extension to IEEE Transactions on Services Computing.

Sep. 2012 - Jan. 2016 [ROME, IT]   SAPIENZA UNIVERSITY OF ROME
Bachelor's Degree in Computer Science
    Thesis: An Administrative Model for Attribute-Based Access Control.

    Final Mark: 110/110 summa cum laude.

PATENTS

US Patent 11,641,363: *Verifying the Authenticity of a Remote Service*, R. Di Pietro, S. Sciancalepore, S. Raponi.
US Patent App. 16/880,525: *Online Account Access Recovery System and Method Utilizing Secret Splitting*, S. Raponi, R. Di Pietro

BOOKS

New Dimensions of Information Warfare, *Springer Nature*, R. Di Pietro, S. Raponi, M. Caprolu, S. Cresci.

SCIENTIFIC PUBLICATIONS IN JOURNALS

Docker ecosystem -- Vulnerability Analysis, A. Martin, S. Raponi, T. Combe, R. Di Pietro, *Computer Communications (COMCOM)*, 2018.
FORTRESS: An Efficient and Distributed Firewall for Stateful Data Plane SDN, M. Caprolu, S. Raponi, R. Di Pietro, *Security and Communication Networks,* 2019,.
Nationality and Geolocation-Based Profiling in the Dark (Web), M. La Morgia, A. Mei, E. Nemmi, S. Raponi, J. Stefa, *IEEE Transactions on Services Computing (TSC), 2019*.
Vessels Cybersecurity: Issues, Challenges, and the Road Ahead, M. Caprolu, R. Di Pietro, S. Raponi, S. Sciancalepore, P. Tedeschi, *IEEE Communication Magazine*, 2020.
A Longitudinal Study on Web-Sites Password Management (in)Security: Evidence and Remedies, S. Raponi, R. Di Pietro, *IEEE Access*, 2020.
Cryptomining Makes Noise: Detecting Cryptojacking via Machine Learning, M. Caprolu, S. Raponi, G. Oligeri, R. Di Pietro, *Computer Communications (COMCOM)*, 2021.
Long-Term Noise Characterization of Narrowband Power Line Communications, S. Raponi, J. Fernandez, A. Omri, G. Oligeri, *IEEE Transactions on Power Delivery*, 2021.
Sound of Guns: Digital Forensics of Gun Audio Samples meets Artificial Intelligence, S. Raponi, I. Ali, G. Oligeri, *Springer Nature Multimedia Tools and Applications*, 2022.
Fake News Propagation: A Review of Models, Datasets, and Insights, S. Raponi, Z. Khalifa, G. Oligeri, R. Di Pietro, *ACM Transactions on the Web*, 2022.
PAST-AI: Physical-layer Authentication of Satellite Transmitters via Deep Learning, G. Oligeri, S. Sciancalepore, S. Raponi, R. Di Pietro, *IEEE Transactions on Information Forensics and Security (TIFS)*, 2022.
Monitoring of Underwater Critical Infrastructures: the Nord Stream and Other Recent Case Studies, G. Soldi, D. Gaglione, S. Raponi, N. Forti, E. D'Afflisio, P. Kowalski, L. M. Millefiori, D. Zizzis, P. Braca, P. Willet, A. Maguer, S. Carniel, G. Sembenini, C. Warner, *IEEE Aerospace and Electronic Systems Magazine*, 2023.

SCIENTIFIC PUBLICATIONS IN CONFERENCES

A Spark is Enough in a Straw World: a Study of Websites Password Management in the Wild, S. Raponi, R. Di Pietro, *14th International Workshop on Security and Trust Management (ESORICS - STM)*, 2018.

Time-Zone Geolocation of Crowds in the Dark Web, M. La Morgia, A. Mei, S. Raponi, J. Stefa, *IEEE International Conference on Distributed Computing Systems (ICDCS)*, 2018.

Edge Computing Perspectives: Architectures, Technologies, and Open Security Issues, M. Caprolu, R. Di Pietro, F. Lombardi, S. Raponi, *IEEE International Conference on Edge Computing*, 2019.

Intrusion Detection at the Network Edge: Solutions, Limitations, and Future Directions, S. Raponi, M. Caprolu, R. Di Pietro, *International Conference on Edge Computing*, 2019.

BrokenStrokes: On the (in)Security of Wireless Keyboards, G. Oligeri, S. Sciancalepore, S. Raponi, R. Di Pietro, ACM *Conference on Security and Privacy in Wireless and Mobile Networks (WISEC)*, 2020.

Next Generation Information Warfare: Rationales, Scenarios, Threats, and Open Issues, S. Raponi, M. Caprolu, R. Di Pietro, *International Conference on Information Systems Security and Privacy (ICISSP)*, 2020.

KaFHCa: Key-establishment via Frequency Hopping Collisions, M. Usman, S. Raponi, M. Qaraqe, G. Oligeri, *IEEE Conference on Communications (ICC): Communication and Information Systems Security Symposium*, 2021.

New Dimensions of Information Warfare: The Economic Pillar–Fintech and Cryptocurrencies, M. Caprolu, S. Cresci, S. Raponi, R. Di Pietro, *International Conference on Risks and Security of Internet and Systems (CRISIS 2021)*.

Beyond SolarWinds: The Systemic Risks of Critical Infrastructures, State of Play, and Future Directions, S. Raponi, M. Caprolu, R. Di Pietro, *Italian Conference on Cybersecurity (ITASEC)*, 2021.

Road Traffic Poisoning of Navigation Apps: Threats and Countermeasures, S. Raponi, S. Sciancalepore, G. Oligeri, R. Di Pietro, *IEEE Security & Privacy*, 2021.

FRACTAL: single-channel multi-FactoR transaction Authentication through a Compromised TerminAL, S. Sciancalepore, S. Raponi, D. Caldarola, R. Di Pietro, *International Conference on Information and Communications Security (ICICS)*, 2022.

FUNDED GRANTS

Principal Investigator (PI), in the Project "*Securing Online Transactions*" funded within the Technology and Development Fund (TDF) - Cycle TDF-02, by the Qatar National Research Fund (QNRF). Amount: $90.627.90

Principal Investigator (PI), in the Project "*Detecting Cryptojacking in Corporate Network*" funded within the Innovation Center's Idea Development Fund Grant - Cycle 02, by the Hamad Bin Khalifa University, Amount: $13.700.

Principal Investigator (PI), in the Project "*Strong Server Authentication for Online Transactions*" funded within the Innovation Center's Idea Development Fund Grant - Cycle 03, by the Hamad Bin Khalifa University, Amount: $ 13.700.

Research Assistant (RA), in the Project "*Extending Blockchain Technology – A Novel Paradigm and Its Applications to Cybersecurity and Fintech*" funded within the National Priority Research Program (NPRP) - NPRP11S-0109-180242, by the Qatar National Research Fund (QNRF), Amount: $600.000.

ACADEMIC ACTIVITIES

TECHNICAL PROGRAM COMMITTEE (TPC)

International Conference on Database and Expert Systems Applications (DEXA 2023)
International Conference on Information Fusion (FUSION 2023)
International Conference on Ambient Systems, Networks and Technologies (ANT 2022)
International Conference on Database and Expert Systems Applications (DEXA 2022)
International Conference on Ambient Systems, Networks and Technologies (ANT 2021)
International Conference on Database and Expert Systems Applications (DEXA 2021)
Symposium on Access Control Models and Technologies (SACMAT 2021)
International Workshop on Cyber Crime (IWCC 2021)
International Workshop on Cyber Crime (IWCC 2020)
International Symposium on Foundations & Practice of Security (FPS 2020)
International Conference on Ambient Systems, Networks and Technologies (ANT 2020)

REVIEWER

IEEE International Conference on Computer Communication (INFOCOM)
ACM Conference on Security and Privacy in Wireless and Mobile Networks (WISEC)
Transactions on Emerging Telecommunications Technologies
Computer Communications (COMCOM)
Computer Networks

IEEE Internet of Things Journal
Pervasive and Mobile Computing
International Journal of Information Security
Journal of Computer Security
IEEE Access
IET Information Security
Security and Communication Networks
Journal of Marine Science and Engineering (JMSE)
Mathematical Biosciences and Engineering
MDPI Applied Sciences

SESSION CHAIR

International Conference on Cloud Computing (2019) – Session VII: Cloud Resources Optimization, San Diego (USA)

CO-FOUNDER AND EXECUTIVE ASSISTANT

Qatar International Cyber Security Contest (2019) – Doha (QA) (January 2019 – December 2019)

MENTOR

Master's Thesis, Title: Terminator: a Termination Effect on Symmetric Key Encryption by Hybrid Ransomware, Student: Ahmad Nasser A. A. Alkuwari.
Master's Thesis, Title: Unikernels for Web Applications and Services: Analysis, Security Assessment, and Offensive Techniques, Student: Faher Bakri.
Master's Thesis, Title: Fake News Propagation Blueprint, Student: Zeinab Khalifa.

CERTIFICATIONS

ARTIFICIAL INTELLIGENCE

Fundamental course in AWS Machine Learning Scholarship, granted by Amazon Web Services.
Artificial Intelligence Analyst 2019 Mastery Award, granted by IBM.
TensorFlow in Practice Specialization, granted by deeplearning.ai.
Deep Learning Specialization, granted by deeplearning.ai.

CYBERSECURITY

Cybrary's Incident Responder Career, granted by Cybrary.
Open-Source Intelligence (OSINT) Fundamentals, granted by TCM Security.
DFIR Investigations and Witness Testimony, granted by Cybrary.
Phishing, granted by Cibrary.
Practical Ethical Hacking, granted by TCM Security.
Cybersecurity Engineering Principles, Process, and Standardization, granted by 2019 Services Conf. Federation (SCF 2019).

MISC

Research Interests: AI, Cybersecurity, Cyber Threat Intelligence, Big Data, Technical Writing
Languages: Italian (native), English (fluent), Spanish (basic), German (basic).
Hobbies: reading, writing, working out, playing guitar, chess, investing.