UNVEILING THE UCS CYBERSECURITY PACKAGE

This bulletin marks the unveiling of the **Understanding Cybersecurity Series (UCS)**, the *first cybersecurity knowledge mobilization program in Canada*. From insightful blogs and cutting-edge cybersecurity analyzers to AI-powered datasets, expert books, and interactive workshops, the UCS package offers essential resources for all audiences. Whether you're a youth, senior, or cybersecurity professional, the UCS package empowers you with the knowledge and tools to navigate the digital world securely. Explore this unique collection and elevate your cybersecurity awareness today!

- **UCS Book Series**
- **UCS Blog Series**
- **UCS Analyzer Series**
- **UCS Dataset Series**
- **UCS Workshop Series**
- **UCS Contest Series**

Join Our Page to Receive Exclusive Cybersecurity Packages in future!

https://www.linkedin.com/in/behaviour-centric-cybersecurity-center-bccc-167961273/

To address the growing challenges of cybersecurity resiliency on a larger scale, it is essential to create tools and resources that are both efficient and accessible. These tools must be developed in collaboration with industry partners and grounded in cutting-edge research to promote public education and awareness. With this vision, the Understanding Cybersecurity Series (UCS) was established as an inclusive program designed to deliver fundamental knowledge in a digestible and approachable manner. The UCS initiative aims to support education and training across diverse audiences, including IT students, academics, researchers, developers, and industry professionals, while also sharing simplified research findings with the broader community. By utilizing social networks and other information-sharing platforms, UCS fosters multi-directional growth in cybersecurity knowledge, empowering individuals to become more informed and engaged in safeguarding IT systems and social responsibility.

As a Canada Research Chair in Cybersecurity, I recognized the need for a comprehensive knowledge mobilization program that could cater to the unique needs of audiences ranging from K-12 students to seniors, spanning technical and nontechnical backgrounds. The UCS program was created to address this gap, offering two distinct sets of materials: academic and technical resources for researchers, educators, and professionals, and non-technical resources tailored for youth, seniors, and the general public. Through this initiative, we aim to advance cybersecurity education and research while equipping the community with the tools and awareness needed to navigate and secure an increasingly digital world. The UCS represents a commitment to inclusivity, accessibility, and innovation in the pursuit of a more resilient cybersecurity ecosystem.

Arash Habibi Lashkari, PhD
Canada Research Chair in Cybersecurity
Associatr Professor at York University
Toronto, ON, Canada

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BOOK SERIES

Discover Our Published Cybersecurity Books: Essential Reads for Every Enthusiast

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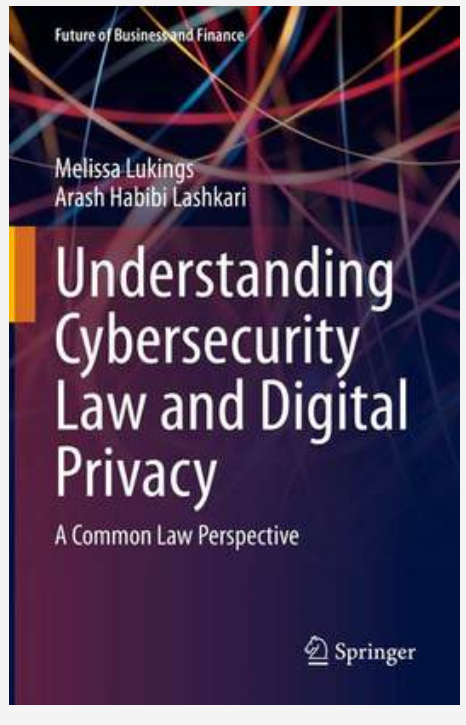

BOOK 1

Understanding Cybersecurity Law and Digital Privacy

- Cybersecurity, data privacy law, and the related legal implications overlap into a relevant and developing area in the legal field. However, many legal practitioners lack the foundational understanding of computer processes which are fundamental for applying existing and developing legal structures to the issue of cybersecurity and data privacy.
- At the same time, those who work and research in cybersecurity are often unprepared and unaware of the nuances of legal application.
- This book translates the fundamental building blocks of data privacy and (cyber)security law into basic knowledge that is equally accessible and educational for those working and researching in either field, those who are involved with businesses and organizations, and the general public.

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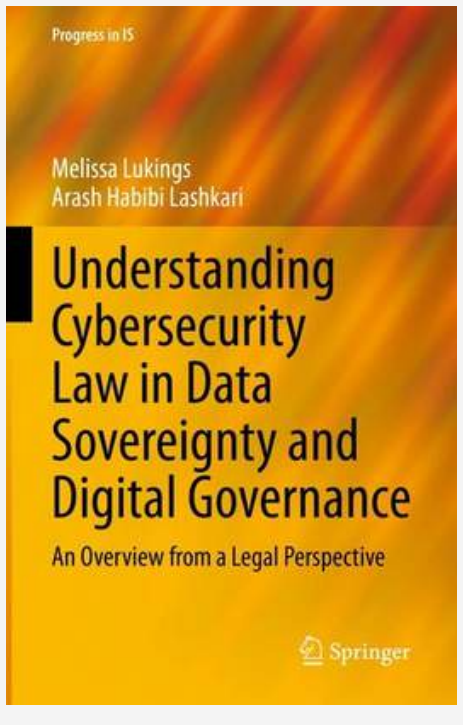

BOOK 2

Understanding Cybersecurity Law in Data Soverinity and Digital Governance

• This book provides an overview of data, sovereignty, and governance in relation to data and online activities through a legal lens and from a cybersecurity perspective.
• The authors delve into the issue of digital governance and theories and systems of governance on a state, national, and corporate/organizational level. Chapter three jumps into the complex area of jurisdictional conflict of laws and the related issues regarding digital activities in both public and private international law.
• Additionally, the book discusses the many technical complexities that underlay the evolution and creation of new law and governance strategies and structures. This includes socio-political, legal, and industrial technical complexities which can apply in these areas.

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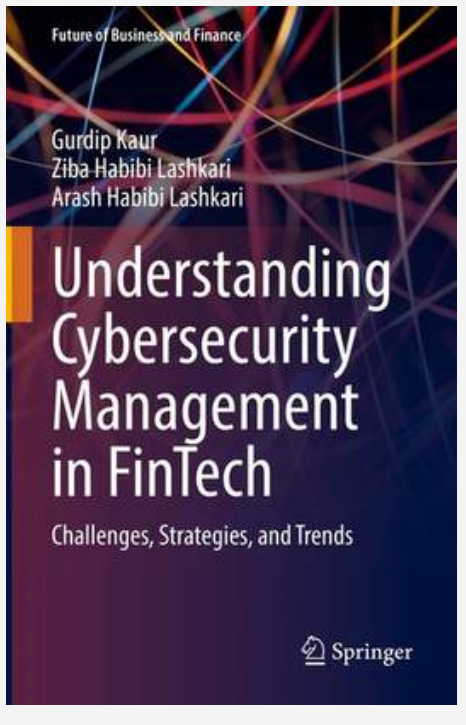

BOOK 3

Understanding Cybersecurity Management in Fintech

- This book explores the idea of understanding cybersecurity management in FinTech. It commences by introducing readers to the fundamentals of FinTech and cybersecurity.
- It emphasizes the importance of cybersecurity for financial institutions by illustrating recent cyber breaches, attacks, and financial losses.
- The book delves into understanding cyber threats and adversaries who can exploit those threats.
- It advances with cybersecurity threat, vulnerability, and risk management in FinTech.
- The book helps readers understand the cyber threat landscape comprising different threat categories that can exploit different vulnerabilities identified in FinTech.
- The authors discuss detailed cybersecurity policies and strategies that can be used to secure financial institutions and provide recommendations to secure financial institutions from cyber-attacks.

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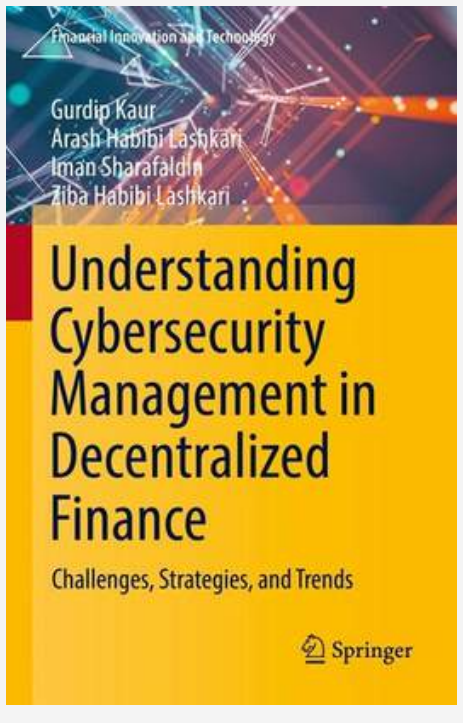

BOOK 4

Understanding Cybersecurity Management in Decentralized Finance

- This book discusses cybersecurity management in decentralized finance (DeFi). It commences by introducing readers to the fundamentals of DeFi and cybersecurity.
- The book delves into understanding cyber threats and adversaries who can exploit those threats. It advances with cybersecurity threat, vulnerability, and risk management in DeFi.
- The book helps readers understand the cyber threat landscape, comprising different threat categories that can exploit different types of vulnerabilities identified in DeFi.
- It puts forward prominent threat modeling strategies by focusing on attackers, assets, and software.
- The book includes the popular blockchains that support DeFi, including Ethereum, Binance Smart Chain, Solana, Cardano, Avalanche, and Polygon, among others. With so much monetary value associated with all these technologies, perpetrators are always lured to breach security by exploiting their vulnerabilities.

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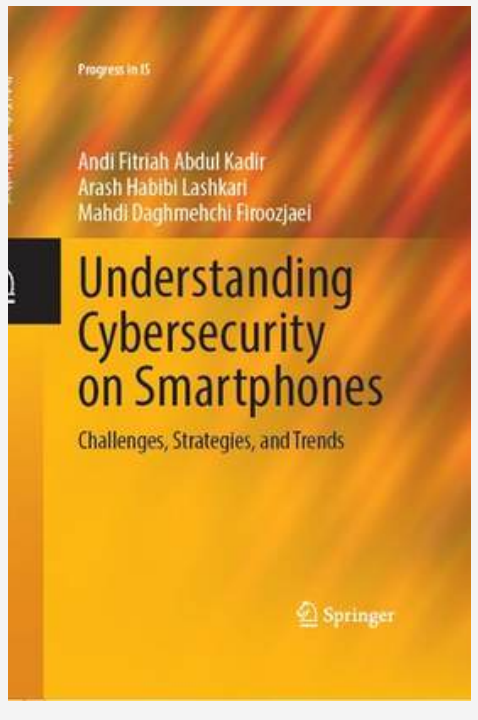

BOOK 5

Understanding Cybersecurity on Smartpnones

• This book offers a comprehensive overview of smartphone security, focusing on various operating systems and their associated challenges. • It covers the smartphone industry's evolution, emphasizing security and privacy concerns. It explores Android, iOS, and Windows OS security vulnerabilities and mitigation measures. • Additionally, it discusses alternative OSs like Symbian, Tizen, Sailfish, Ubuntu Touch, KaiOS, Sirin, and HarmonyOS. • The book also addresses mobile application security, best practices for users and developers, Mobile Device Management (MDM) in enterprise settings, mobile network security, and the significance of mobile cloud security and emerging technologies such as IoT, AI, ML, and blockchain. • It discusses balancing innovation with solid security practices in the ever-evolving mobile technology landscape.

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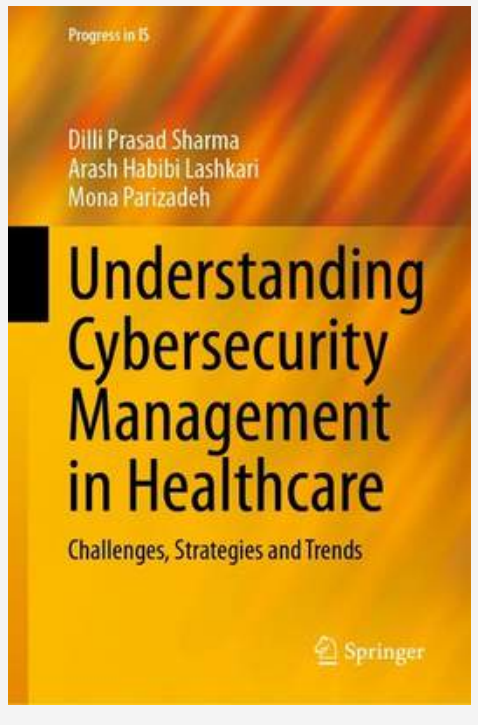

BOOK 6

Understanding Cybersecurity Management in Healthcare

• This book provides an understanding of cybersecurity in healthcare, which is crucial for protecting personal information, ensuring compliance with regulations, maintaining patient trust, and preventing cyber-attacks.
• The discussion continues with data and information security in healthcare, including data threats and vulnerabilities, the difference between data protection and privacy, and how to protect data.
• Afterward, the authors focus on the software system frameworks and infra-security and app security types in healthcare. A key goal of this book is to provide readers with an understanding of how to detect and prevent cyber-attacks in the healthcare sector and how to respond to and recover from them.
• By understanding the risks and challenges of cybersecurity in healthcare, healthcare providers and organizations can better protect sensitive and confidential data and ensure the safety and privacy of those they serve.

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BLOG SERIES

New Insights Unveiled: UCS Blog Series for All Audiences!

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BLOG 01(10 ARTICLES):

Understanding Canadian Cybersecurity Laws (UCCL)

https://www.yorku.ca/research/bccc/ucs-blogs/

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BLOG 02 (6 ARTICLES):

Understanding Android Malware Families (UAMF)

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BLOG 03 (5 ARTICLES):

Understanding Cybersecurity Management for FinTech (UCM-FinTech)

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BLOG 04 (6 ARTICLES):

Understanding Current Cybersecurity Challenges in Law (UCC-CL)

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BLOG 05 (6 ARTICLES):

Understanding Cybersecurity Management in DeFi (UCM-DeFi)

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BLOG 06 (6 ARTICLES) :

Understanding Cybersecurity on Smartphones (UC-SPh)

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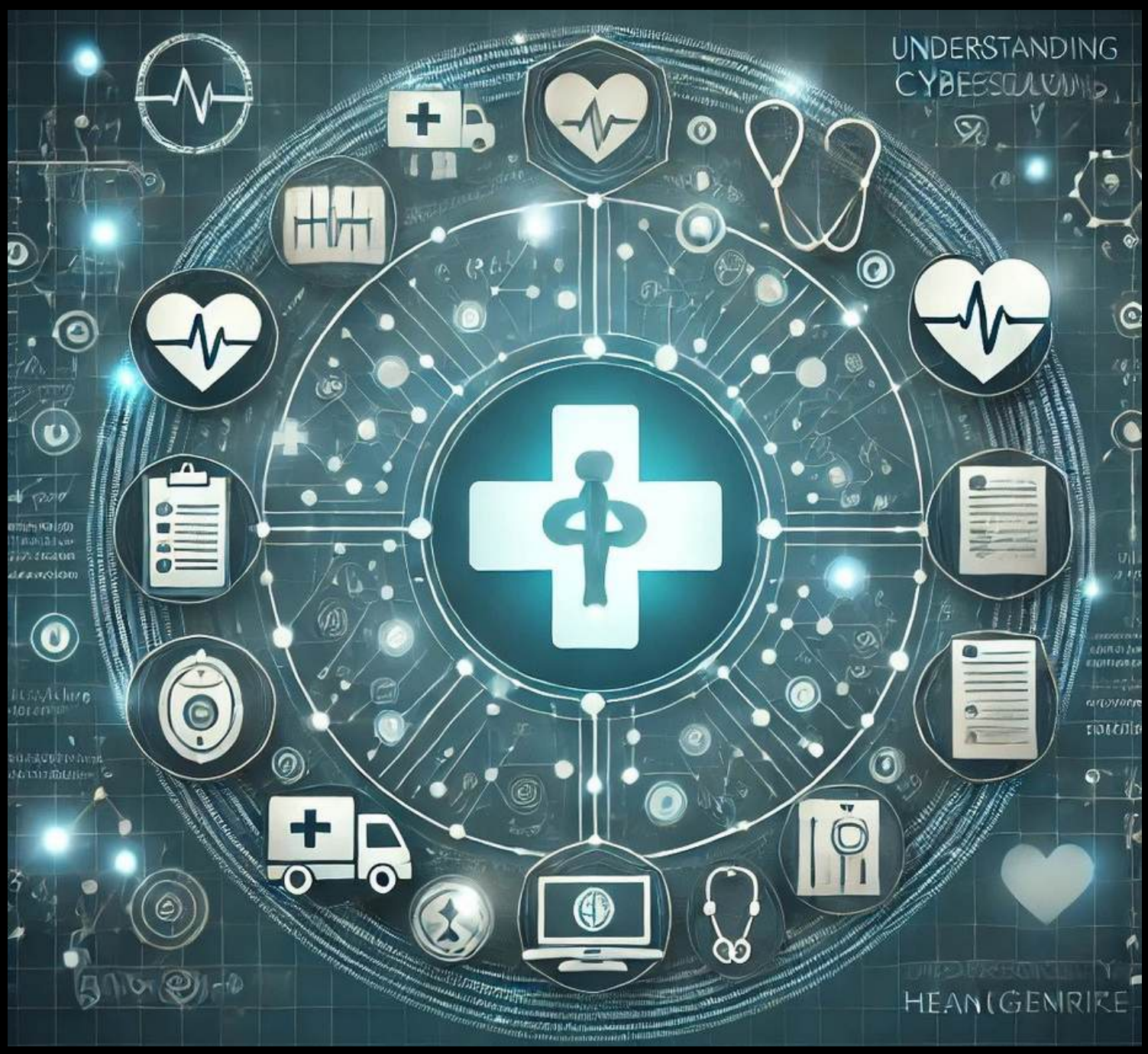
BLOG 07 (4 ARTICLES):

Understanding Cybersecurity Management in Healthcare (UCS-MH)



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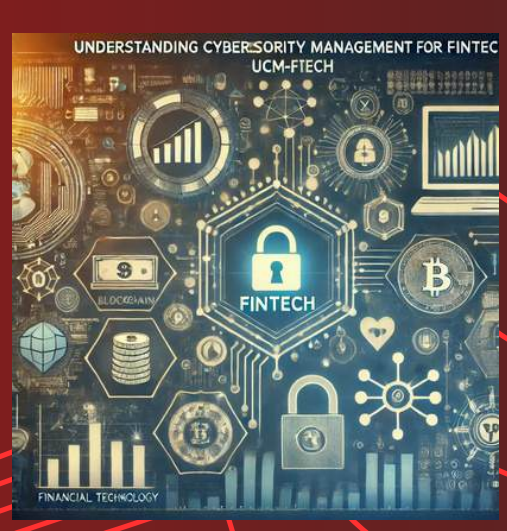

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ANALYZER SERIES

DISCOVER CUTTING-EDGE CYBERSECURITY ANALYZERS

FOR

RESEARCHERS, DESIGNERS AND DEVELOPERS!

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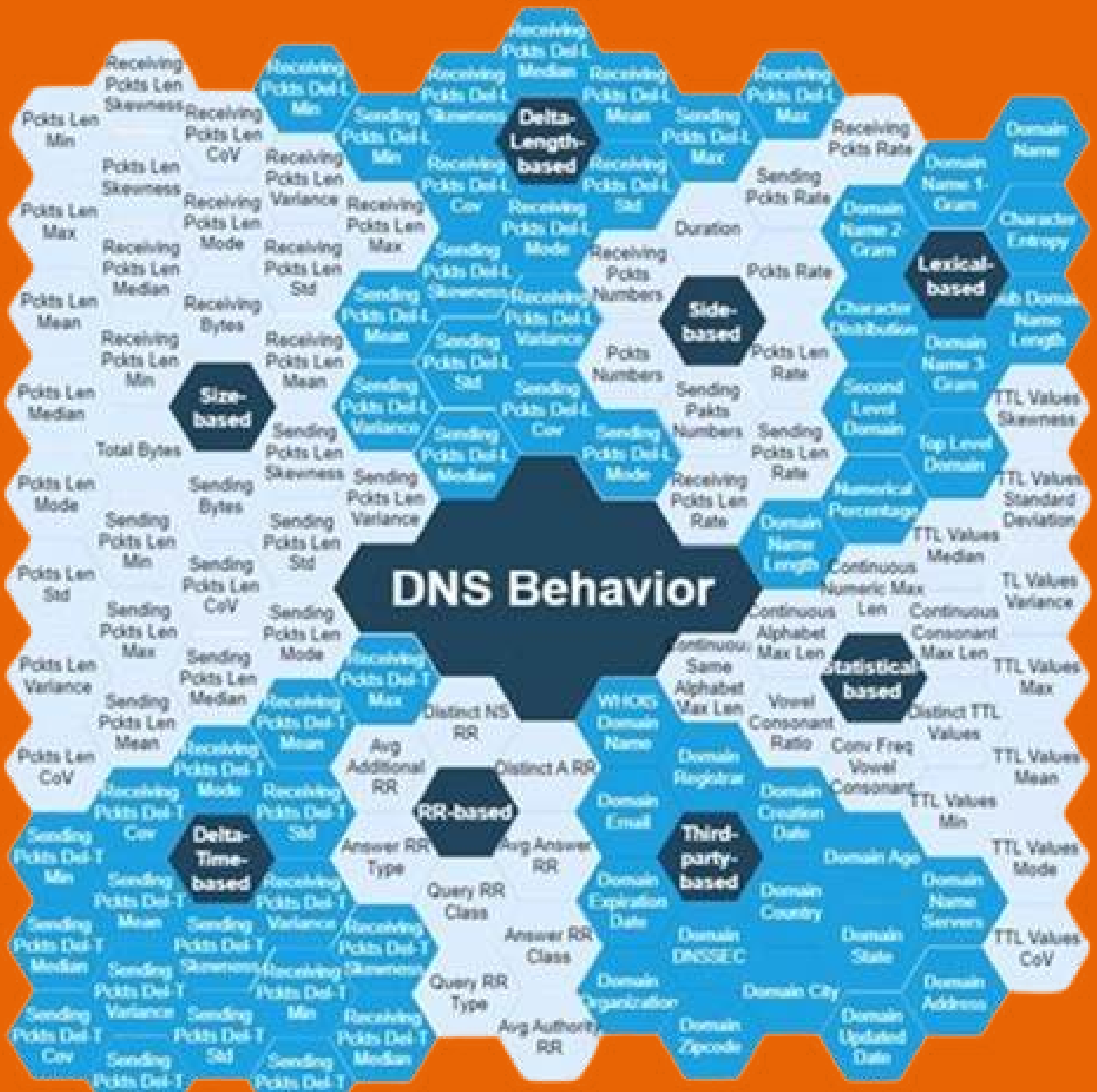
ANALYZER 01:
Applicaiton Layer Flow Analyzer (ALFlowLyzer)

For Network Security experts: Extracting over 250 features from the Applicaiton Layer data in a network traffic



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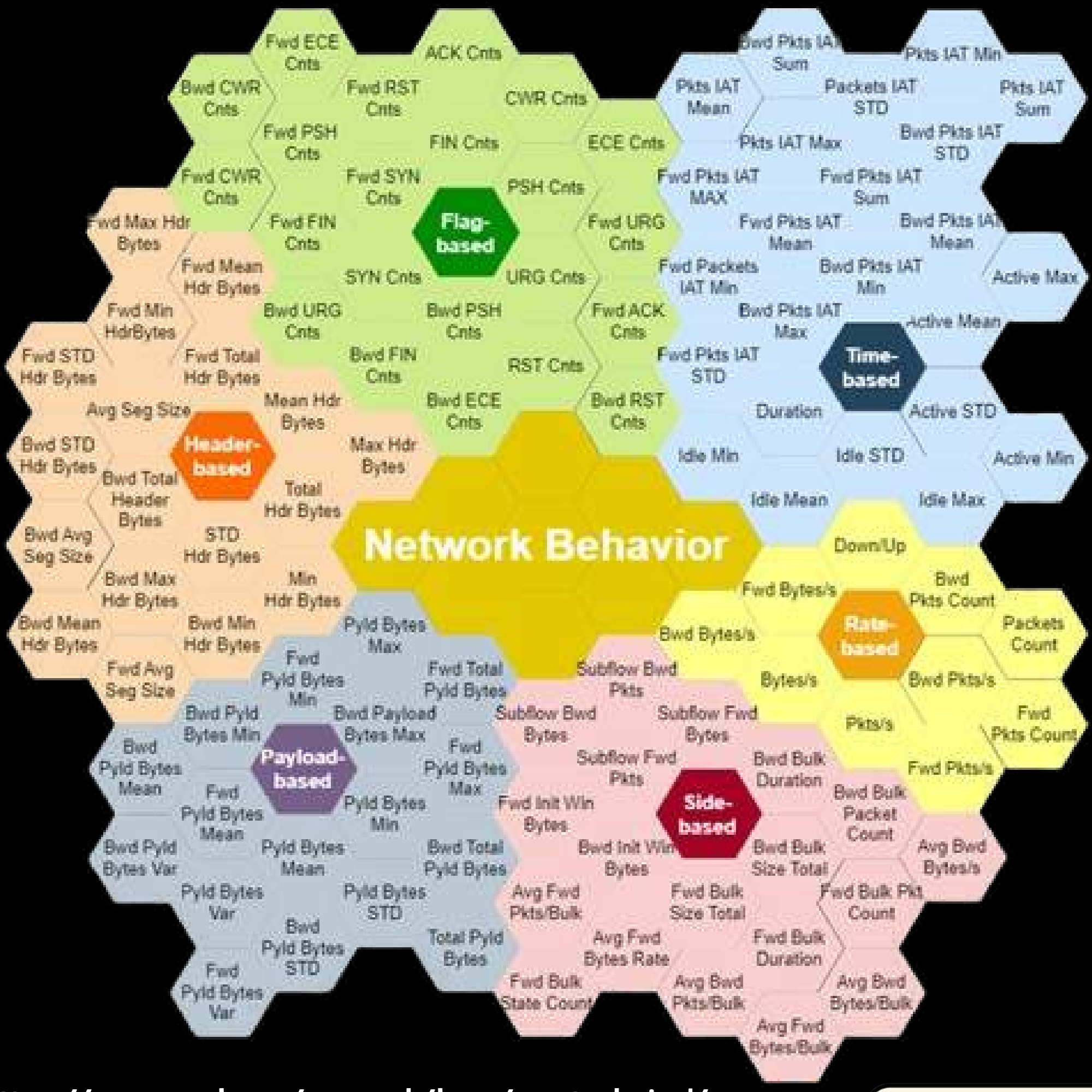
ANALYZER 02:

Network and Transport Layers Flow Analyzer (NTLLFlowLyzer)

For Network Security experts: Extracting over 300 features from the Network and Transport Layers data in a network traffic



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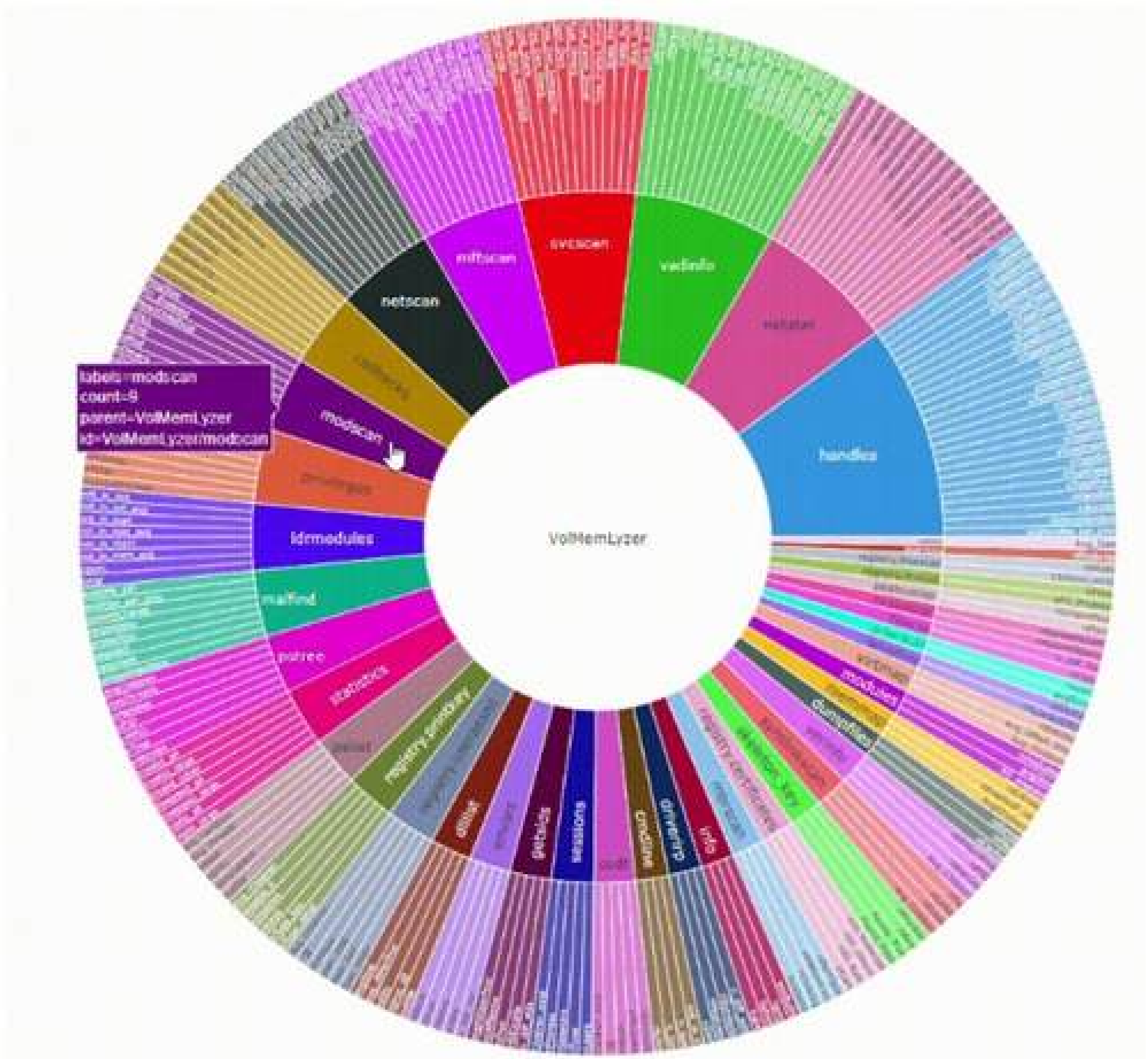
ANALYZER 03:
Volatile Memory Analyzer (VolMemLyzer)

For System Security experts: Extracting over 350 features from the Random Access Memory (RAM) dumps



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ANALYZER 04:
PDF Malware Analyzer (PDFMalLyzer)

For Informaiton Security experts: Extracting over 36 features from an PDF file

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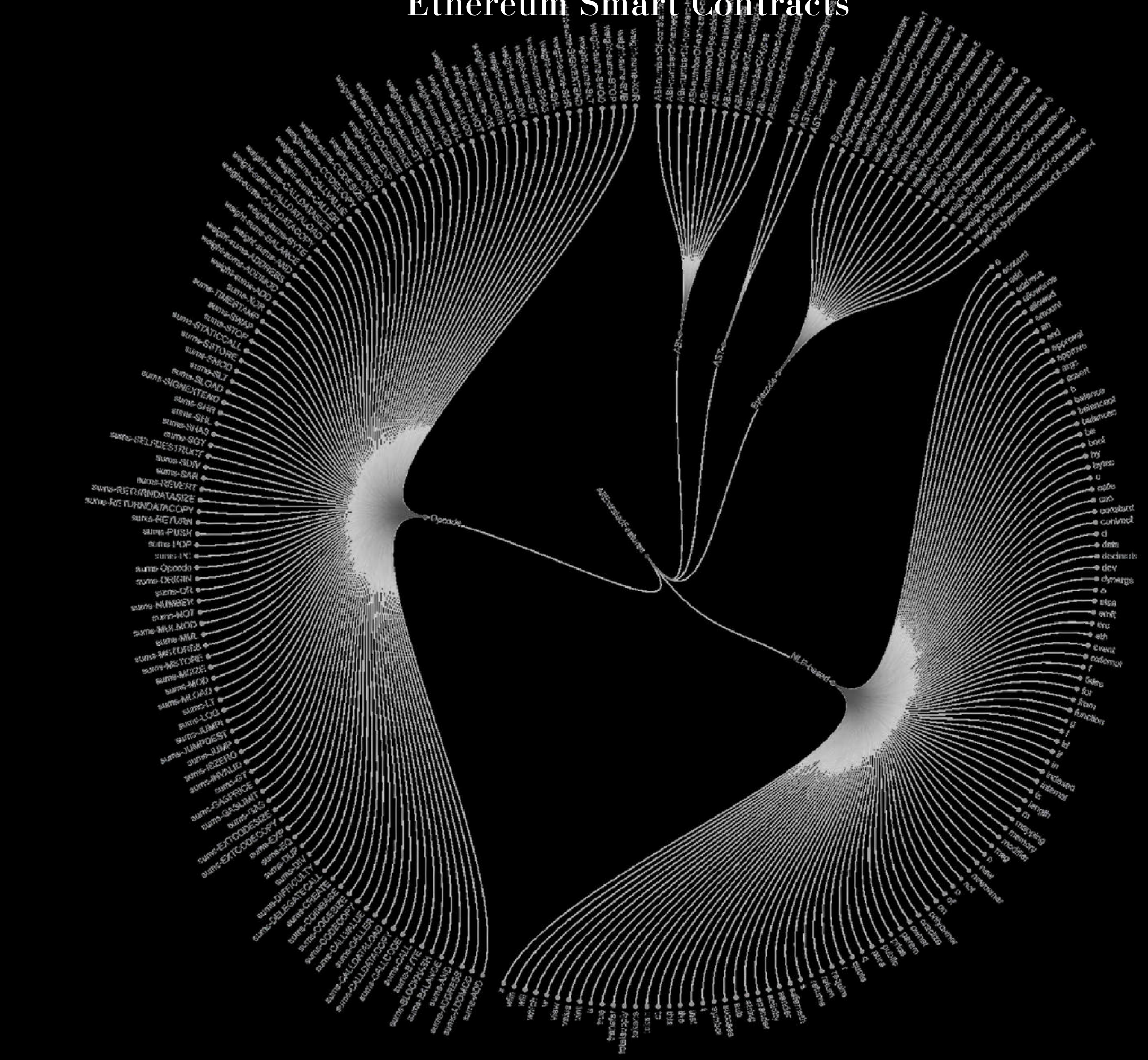
ANALYZER 05:
Smart Contracts Vulnerability Analyzer (SCsVulLyzer)

For Block Chain Security experts: Extracting over 250 features from the Ethereum Smart Contracts



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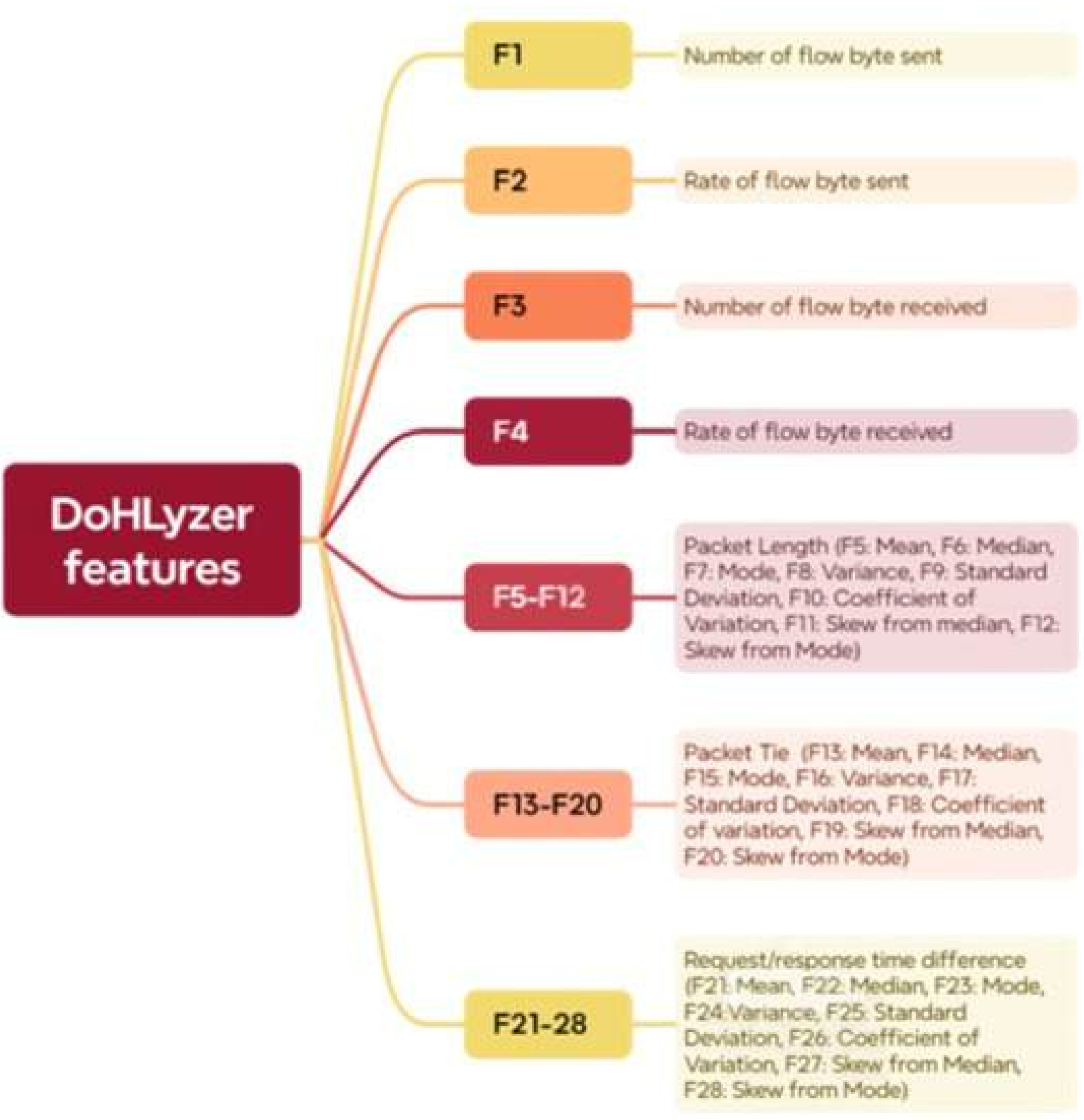
ANALYZER 06:
DoH Analyzer (DoHLyzer)

For Network Security experts: Extracting 28 features from the DNS over HTTPS network traffic



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ANALYZER SERIES

Application Layer Flow Analyzer (AlFlowLyzer)

Network and Transportaiton Layers Flow Analyzer (NTLFlowLyzer)

Smart Contracts Vulnerability Analyzer (SCsVulLyzer)

PDF Malware Analyzer (PDFMalLyzer)

DNS over HTTPS Analyzer (DoHLyzer)

Volatile Memory Analyzer (VolMemLyzer)

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Dataset Series

Empowering AI-Driven Security: Unlock the Potential of Cybersecurity Datasets

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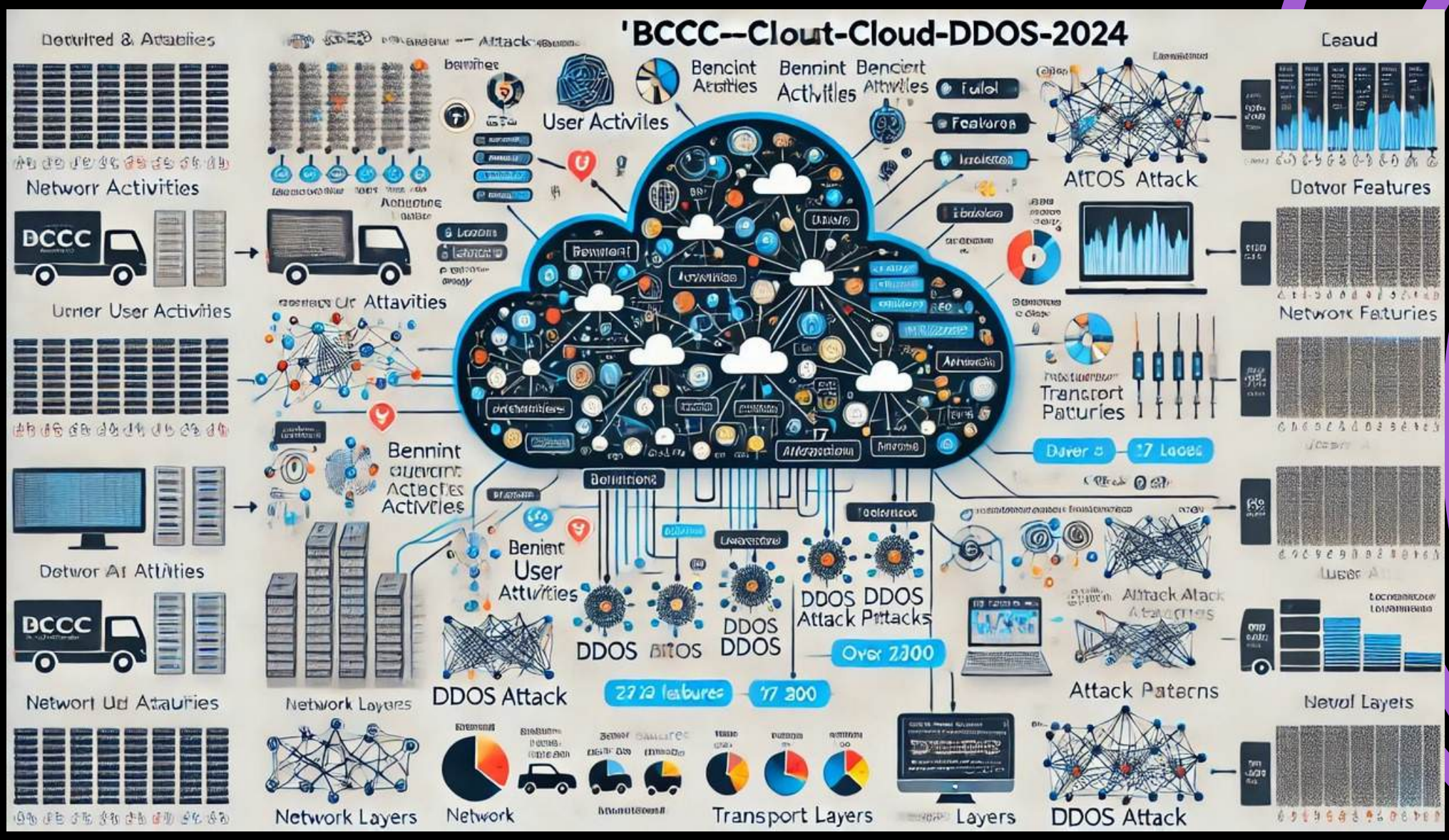
Cloud DDoS Attacks

(BCCC-cPacket-Cloud-DDoS-2024)



The "BCCC-cPacket-Cloud-DDoS-2024" dataset features 8 benign activities and 17 DDoS attack types, with 26 distinct labels and over 300 extracted features from network and transport layers.

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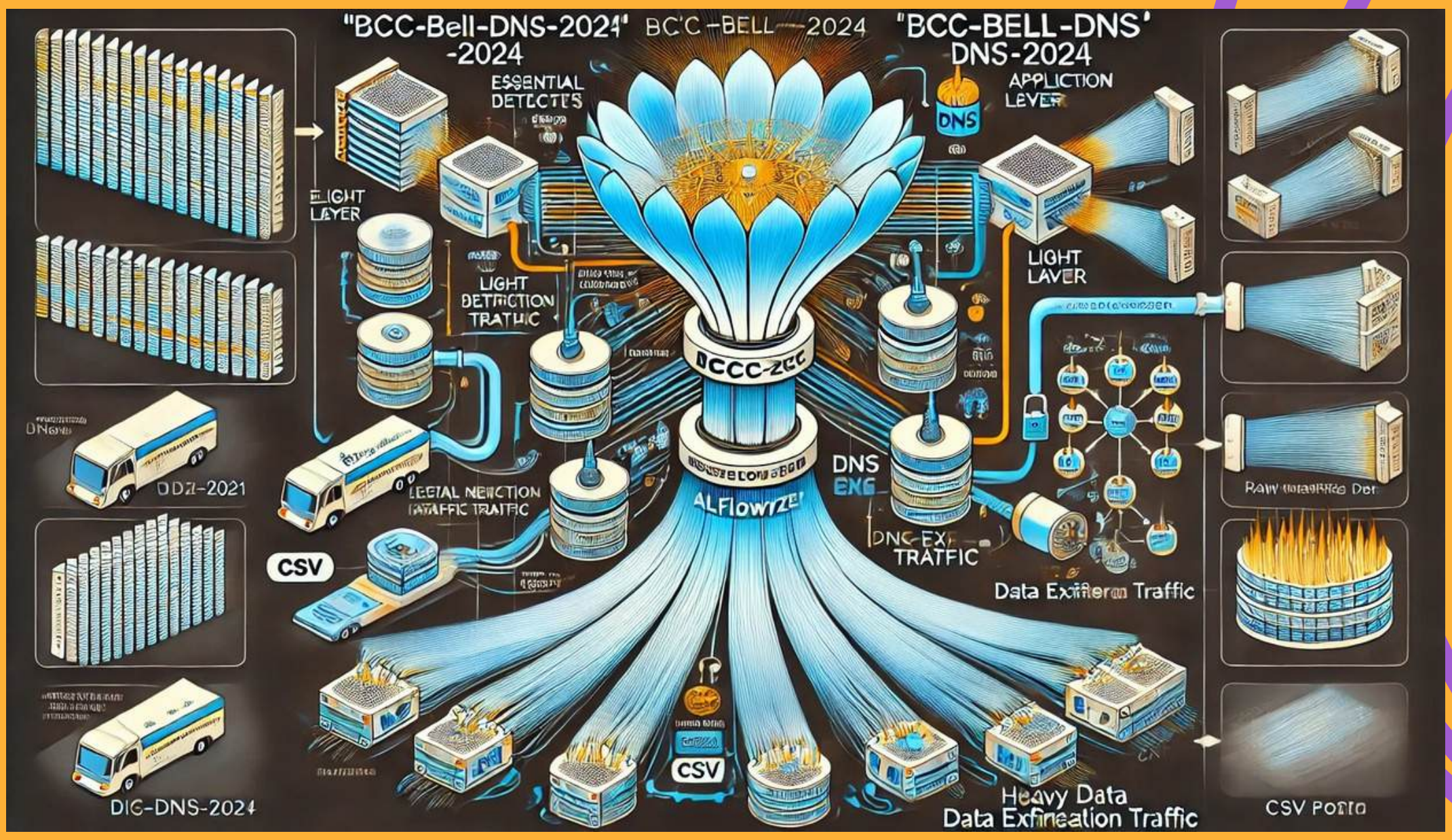
Malicious DNS and Attacks

(BCCC-CIC-Bell-DNS-2024)



The "BCCC-CIC-Bell-DNS-2024" dataset was created using "CIC-Bell-DNS-2021" and "CIC-Bell-DNS-EXF-2021," processed through ALFlowLyzer to extract essential flows and integrate DNS metadata and application layer features, resulting in a dataset with 200 features across six sub-categories of light and heavy data exfiltration traffic for enhanced analysis of DNS data exfiltration attacks.

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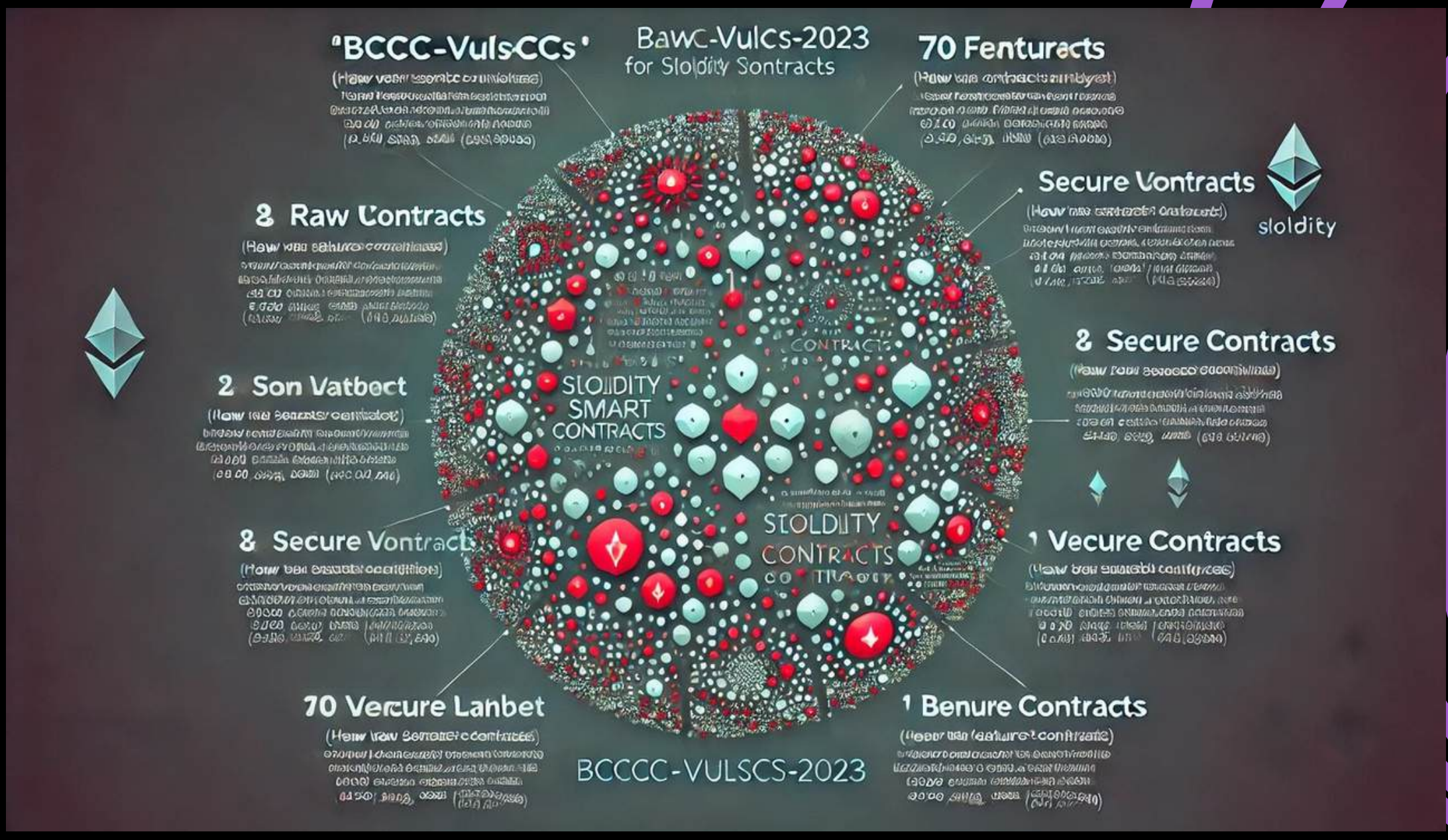
Vulnerable Smart Contracts

(BCCC-VulSCs-2023)



The "BCCC-VulSCs-2023" dataset consists of 36,670 smart contract samples with 70 features each. The dataset helps in predicting contract behavior, identifying patterns, and classifying contracts based on security and functionality.

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DNS over HTTPS

(BCCC-CIRA-CIC-DoHBrw-2024)

The "BCCC-CIRA-CIC-DoHBrw-2020" dataset balances 249,836 instances each of malicious and benign DoH traffic, addressing the imbalance in the original dataset. This was achieved using the SMOTE technique and includes three CSV files for malicious, benign, and combined traffic data.

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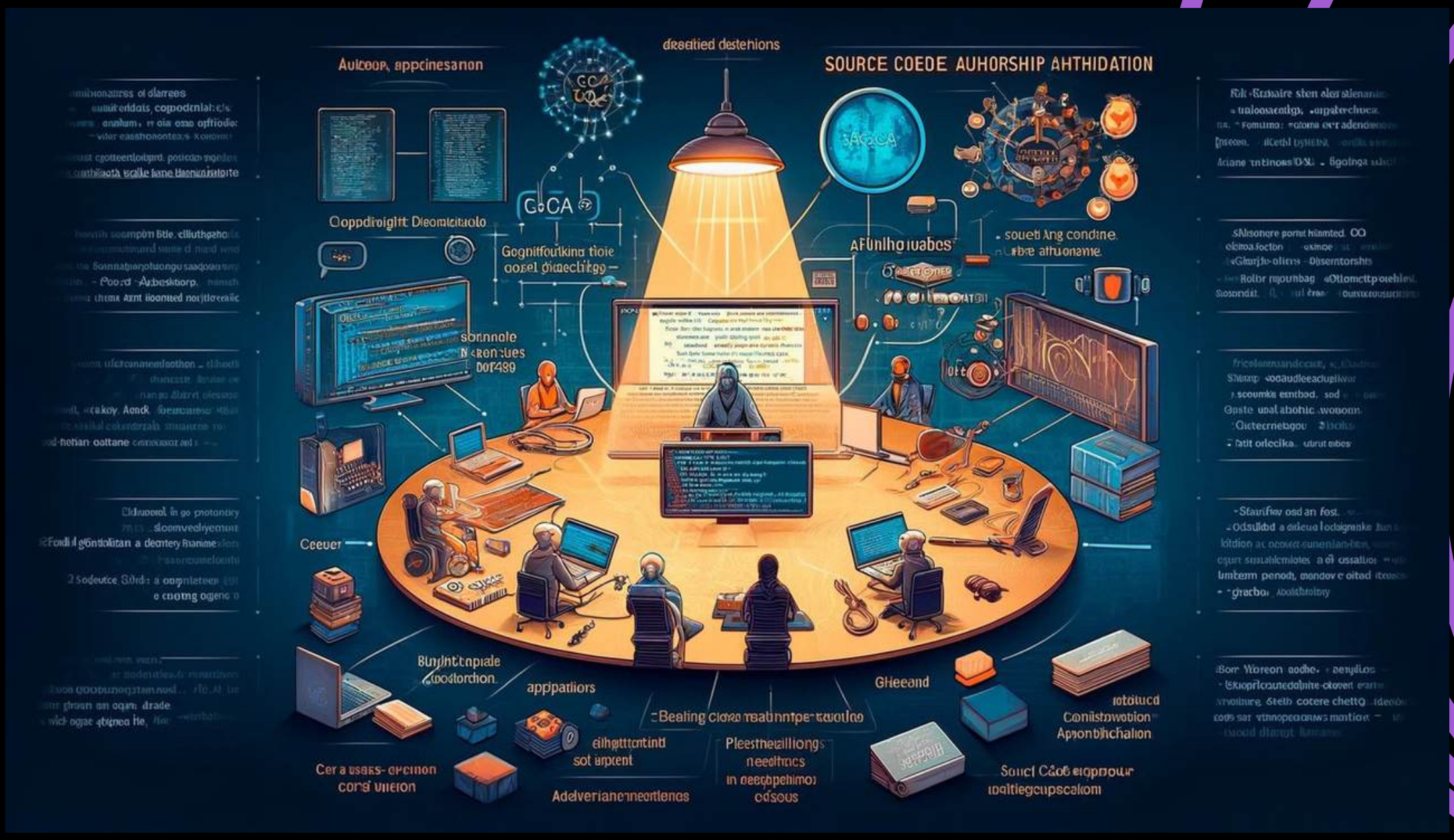
Source Code Authorship Attribution

(BCCC-SCAA-2022)



The Source Code Authorship Attribution (SCAA) dataset includes 1,632 code files attributed to 204 authors. It was created by extracting data from GCJ and GitHub datasets, with additional samples of attacks and adversarial examples generated using the Source Code Imitator tool.

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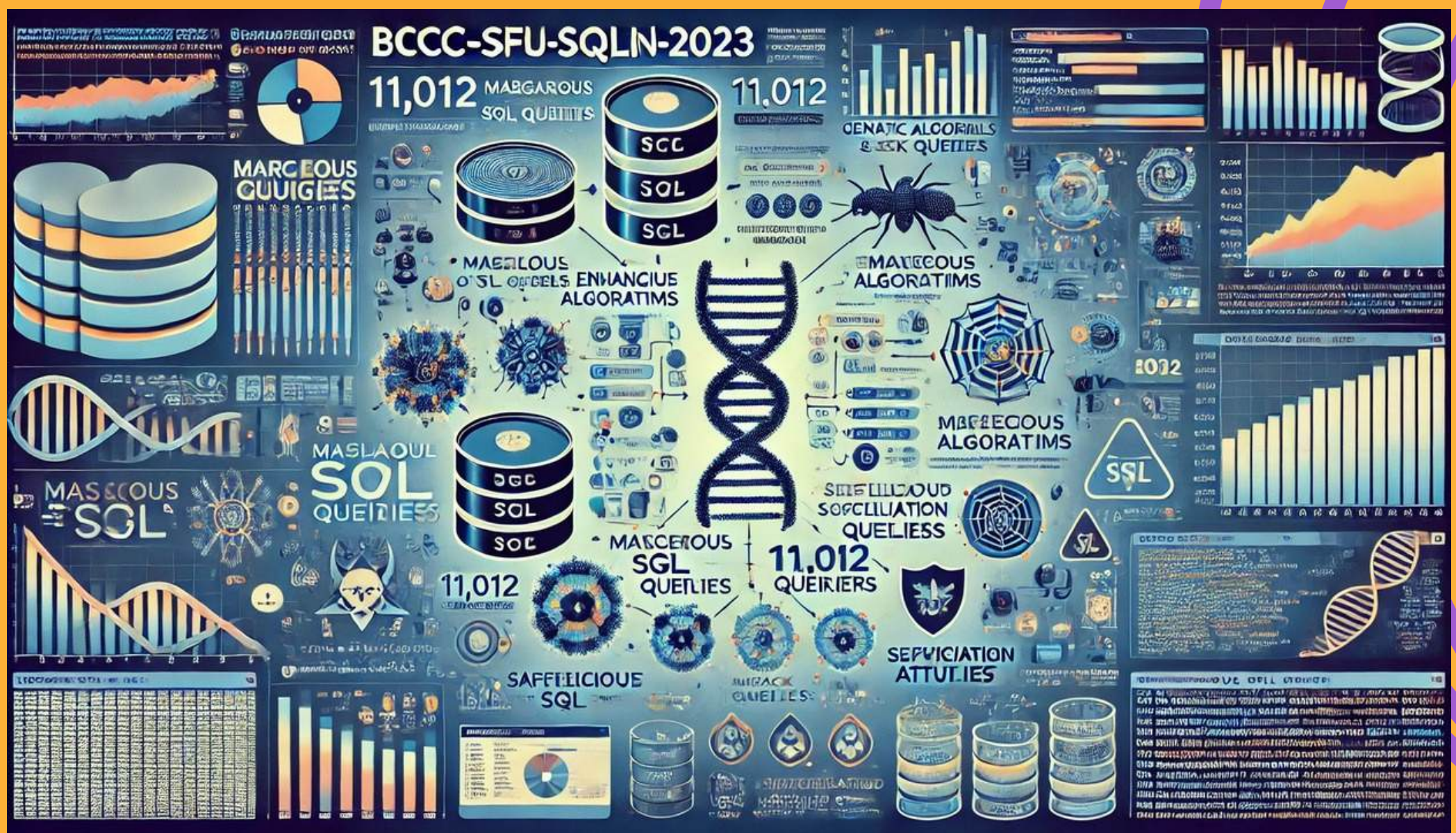
SQL Injection Attack

(BCCC-SFU-SQLInj-2023)



The "BCCC-SFU-SQLInj-2023" dataset contains 11,012 sophisticated and evasive malicious SQL queries, enhanced using a genetic algorithm applied to the original Kaggle malicious SQL dataset.

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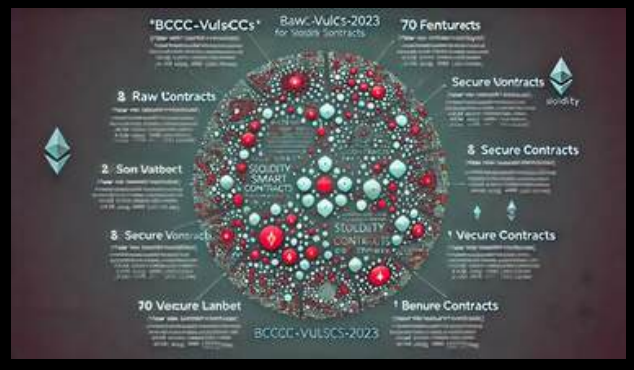

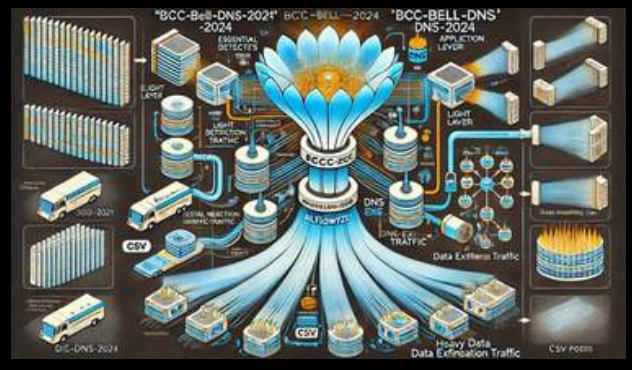

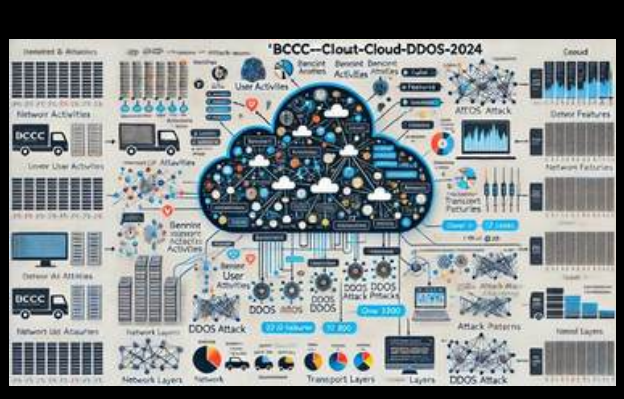

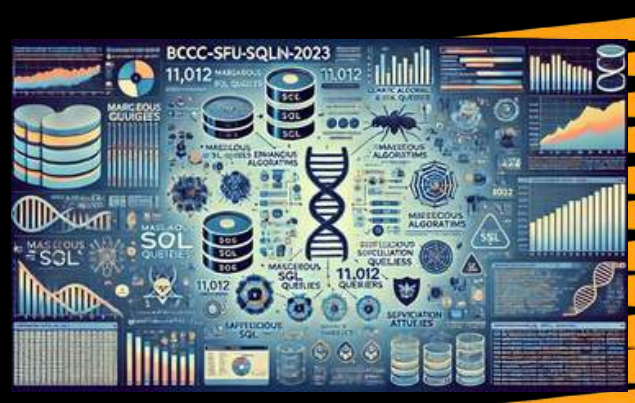

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Understanding Cybersecurity Series (UCS)

Workshop Series

Cybersecurity Workshop Series: Empowering Your Digital Defense

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WORKSHOPS FOR ACADEMIA

- The Future of Cybersecurity: Leveraging Tools and Data for Enhanced Threat Detection, McMaster University (Oct 31)
- Elevating Cybersecurity Vigilance: UCS for Fintech and Digital Finance, University of Windsor (Sep 27)
- AI's Impact On Cyber Security (What You Need To Know), Markham Board of Trade (Sep 26)
- Elevating Cybersecurity Vigilance: UCS for Fintech and Digital Finance, EIT Digital, Europe (July 2-7)
- Elevating Cybersecurity Vigilance: Understanding Cybersecurity Series (UCS), MacEwan University, Alberta (February 9th)
- Understanding Cybersecurity Series (UCS), NC A&T University, NC, USA, (April 20th, 10:00 am)
- Data Security and Governance, University of Toronto - Toronto, ON (Jan 17th, 16:00 PM)

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WORKSHOPS FOR INDUSTRIES

- Elevating Cybersecurity Vigilance: UCS-Insurance Cyber attacks, 3rd Annual GCS Client Event, Aviva (May 14)
- Elevating Cybersecurity Vigilance: Understanding Cybersecurity Series (UCS), NICT, Tokyo, Japan (December 1st)
- Navigating Cybersecurity: Empowering Public Safety and Awareness through UCS, York Circle, Toronto, ON (October 14th)

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Understanding Cybersecurity Series (UCS) workshop Series

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CONTEST SERIES

Cybersecurity Cartoon Award: A Creative Take on Digital Security

https://cybersecuritycartoonaward.com

Cyber Security Cartoon Award

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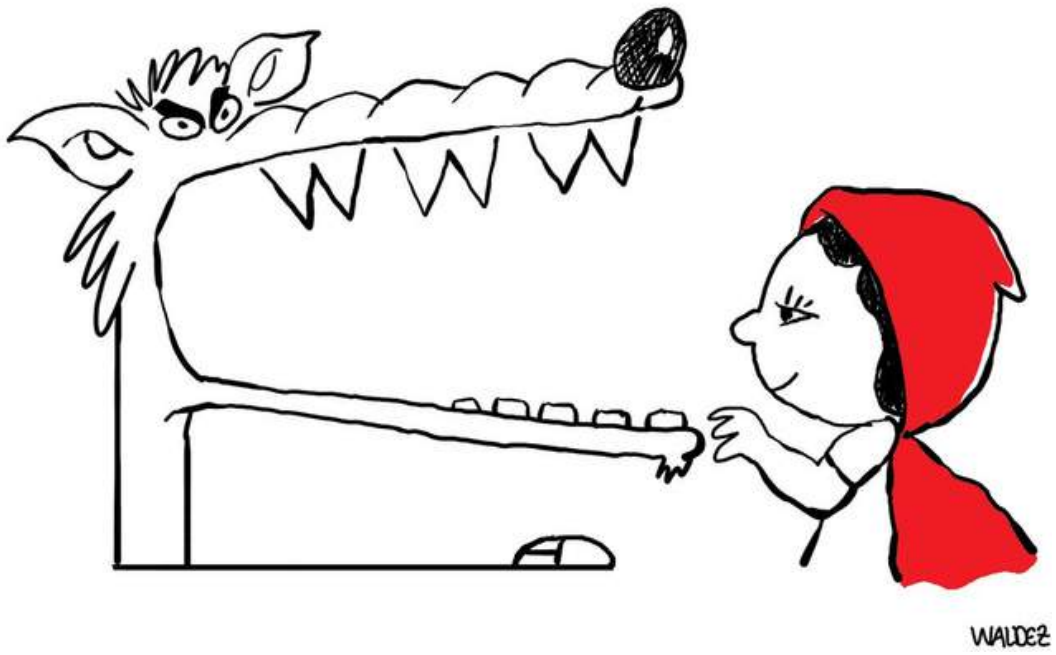
Winners - 2024



First Prize: Rua Gen. Arthur Koehler
Brasil

Third Prize: Marcin Bondarowicz
Poland

Second Prize: Goutsol Oleg
Ukraine

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Cyber Security Cartoon Award

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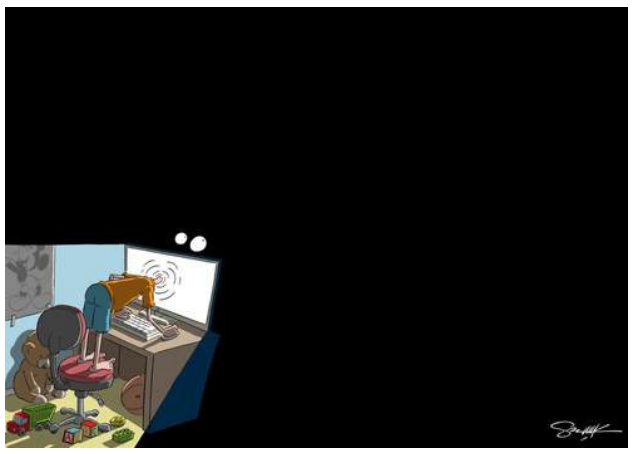
Honorory Mentions - 2024



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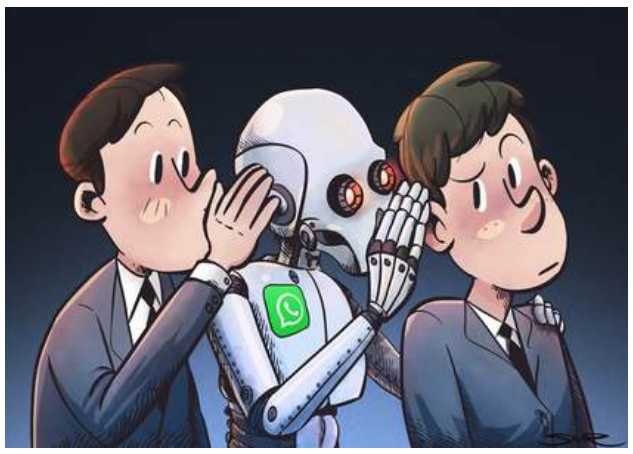

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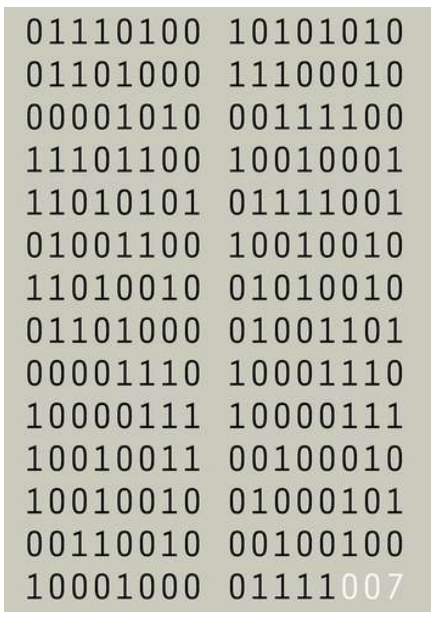

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