

# Michele Campobasso

PhD in Information Security @ Eindhoven University of Technology

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## about me

Computer scientist with an unusual interest for social relations. I am often called optimistic, but I consider myself realistic. I believe that many problems need just a different approach to be solved. I am the kind of guy that wonders 'why' a thing has always been like that, often between 10PM and 3AM.

## personal

pronouns: he/him  
nationality: Italian

## areas of specialization

Threat modeling, emerging threats, underground market investigation, threat quantification, penetration testing

## interests

Biking, go-karts, hiking, organizing social events, on-the-road travels, fixing 'broken' electronics, cooking Italian & exotic food, my nerdy YouTube feed

## languages

Italian: mother tongue  
English: professional proficiency

@alpha\_cenauri3  
 michelecampobasso

## EDUCATION

2019-2024

### Doctorate in Information Security – Specialty in Cybercrime Ecosystem

Thesis title: Understanding and Characterizing the Cybercriminal Ecosystem Enabling Attack Innovation at Scale  
*Eindhoven University of Technology*

2016-2019

### Master in Computer Science and Engineering

Thesis title: CARONTE: a Crawler for Adversarial Resources Over Non-Trusted, high-profile Environments  
*Alma Mater Studiorum - University of Bologna*

2011-2016

### Bachelor in Computer Engineering

*Alma Mater Studiorum - University of Bologna*

## RESEARCH OVERVIEW & IMPACT

- EXPERTISE IN: **underground forum marketplaces** and their **impact** in the threat landscape [2], **emerging threats** and **threat modeling** [5], underground community infiltration, **stealth** data collection [3], **attacker preferences** and **cyber threat quantification** [1]
- RESEARCH ON EMERGENT THREAT [5] instrumental to **international investigation led by the Dutch National Police & EUROPOL**, leading to hundreds of arrests worldwide & market shutdown in a massive law enforcement operation ([press release](#)).
- CONTRIBUTION ON ACCESS-AS-A-SERVICE [4] was **presented to the U.S. Department of Commerce**; NSO Group was included as a company threatening the US national security ([press release](#)).
- LARGE INDUSTRY & MEDIA ATTENTION ([Troy Hunt](#), [Recorded Future](#) on Genesis Market, local media)
- EXPLOIT PREDICTION SCORING SYSTEM (EPSS) special interest group member and contributor ([link](#)).

## WORK EXPERIENCE

2019-2022

### Head of lab activities for Offensive Computer Security

ORGANIZING HANDS-ON LAB SESSIONS AND MANAGING 150+ STUDENTS  
*Eindhoven University of Technology* ↗

2019-2024

### Supervisor and coordinator of scientific projects at the MSc level

9 GROUPS, 35 STUDENTS OA – THREAT INTEL EXTRACTION, MALWARE ANALYSIS  
*Eindhoven University of Technology* ↗

2019-2023

### Analyst of underground cybercriminal markets: infiltration, stealth monitoring, threat modeling, and activity estimation

OBTAIN ACCESS TO SEGREGATED MARKETS; AUTOMATED, STEALTH DATA EXTRACTION WITH TAILORED, CUSTOM CREATED CRAWLERS; EMPIRICAL AND STATISTICAL METHODS, UNDERGROUND INVESTIGATIONS  
*Eindhoven University of Technology* ↗

2019-2024

### Doctorate in Information Security - Specialty: Cybercrime Ecosystem

*Eindhoven University of Technology* ↗

#### Internship: Junior Web Developer and Beta Tester

*GetConnected S.r.l.* ↗

#### Internship: Junior Developer

*AltaVia S.r.l.* ↗

## INVITED TALKS

May 2023

'**Not all cybercrime is boring if you know what to look for**' – UNDERGROUND THREAT SOURCES, CYBER THREAT QUANTIFICATION @ *INTERSCT 2023*, The Hague, NL

"**Do we have an agreement?**": Exploiting Trust Mechanisms in Cybercriminal Underground Markets to Derive Attacker Preferences and Estimate Threat Levels – UNDERGROUND THREAT SOURCES, CYBER THREAT QUANTIFICATION @ *Alma Mater Studiorum - University of Bologna*, Bologna, IT

May 2022

'**Impersonation-as-a-Service: Characterizing the Emerging Criminal Infrastructure for User Impersonation at Scale**' – EMERGING THREATS, THREAT MODELING, CYBER THREAT QUANTIFICATION @ *INTERSCT 2022*, Enschede, NL

**Not all threat (actors) are the same: a multidisciplinary take on cybercrime proliferation** – EMERGING THREATS, THREAT MODELING @ *Dutch Police Cybercrime Team, Online*

Nov 2020

'**Impersonation-as-a-Service: Characterizing the Emerging Criminal Infrastructure for User Impersonation at Scale**' – EMERGING THREATS, THREAT MODELING @ *ASML, Eindhoven*, NL

Mar 2020

'**Myth-busting the underground: a journey into the (often un)organized cybercrime**' – UNDERGROUND ECOSYSTEM @ *Alma Mater Studiorum - University of Bologna*, Bologna, IT

## TECHNICAL CYBERSECURITY EXPERIENCE

2019-2022	<b>Head of lab activities for Offensive Computer Security at Eindhoven University of Technology</b> ORGANIZING HANDS-ON LAB SESSIONS AND MANAGING 150+ STUDENTS
2019-2021	<b>Malware analysis and reverse engineering</b> EXPERIENCE WITH GHIDRA & GDB MATURED WITH CTFs AND ACADEMIC RESEARCH
2018-2023	<b>Tool creation for stealth data extraction</b> BROWSER INSTRUMENTATION, HUMAN BEHAVIOR MODELING, DATA PARSING ON THE FLY
2016-2020	<b>HackTheBox CTFs</b> BEST RANKING GLOBALLY ON THE PLATFORM: 187, COMPLETION SCORE OF 76%
2019-2020	<b>HackTheBox write-ups blog</b> CO-AUTHOR OF A <a href="#">BLOG</a> CONTAINING DETAILED WRITE-UPS OF RETIRED BOXES FROM THE PLATFORM HACKTHEBOX
2017-2019	<b>IO NetGarage</b> REVERSE ENGINEERING & BINARY EXPLOITATION. BASIC EXPLOIT CRAFTING SKILLS
2018-2019	<b>Various CTF challenges</b> AS A MEMBER OF THE UNIVERSITY OF BOLOGNA'S HACKING TEAM ULISSELABBO

## FULL LIST OF PUBLICATIONS

Aug 2023	<b>[1] Know Your Cybercriminal: Evaluating Attacker Preferences by Measuring Profile Sales on an Active, Leading Criminal Market for User Impersonation at Scale</b> ( <a href="#">paper</a> ). MICHELE CAMPOBASSO, LUCA ALLODI; <i>32<sup>nd</sup> USENIX Security Symposium (USENIX Security 2023), Los Angeles, USA</i> 
Jul 2023	<b>[2] You Can Tell a Cybercriminal by the Company they Keep: A Framework to Infer the Relevance of Underground Communities to the Threat Landscape</b> ( <a href="#">paper</a> ). MICHELE CAMPOBASSO, LUCA ALLODI; <i>The 22<sup>nd</sup> Workshop on the Economics of Information Security (WEIS 2023), Geneva, Switzerland</i> 
Nov 2022	<b>[3] THREAT/crawl: a Trainable, Highly-Reusable, and Extensible Automated Method and Tool to Crawl Criminal Underground Forums</b> ( <a href="#">paper</a> ). MICHELE CAMPOBASSO, LUCA ALLODI; <i>The 17<sup>th</sup> Symposium on Electronic Crime Research (APWG eCrime 2022), online</i>
Feb 2022	<b>SAIBERSOC: A Methodology and Tool for Experimenting with Security Operation Centers</b> ( <a href="#">paper</a> ). MARTIN ROSSO, MICHELE CAMPOBASSO, GANDGUULGA GANKHUYAG, LUCA ALLODI; <i>Digital Threats: Research and Practice</i> .
Mar 2021	<b>[4] A Primer on the Proliferation of Offensive Cyber Capabilities</b> ( <a href="#">paper</a> ). WINNONA DE SOMBRE, MICHELE CAMPOBASSO, LUCA ALLODI, JAMES SHIRES, JD WORK, ROBERT MORGUS, PATRICK HOWELL O'NEILL, TREY HERR; <i>In-Depth Research &amp; Reports, Atlantic Council</i>
Feb 2022	<b>SAIBERSOC: Synthetic Attack Injection to Benchmark and Evaluate the Performance of Security Operation Centers</b> ( <a href="#">paper</a> ). MARTIN ROSSO, MICHELE CAMPOBASSO, GANDGUULGA GANKHUYAG, LUCA ALLODI; <i>The 36<sup>th</sup> Annual Computer Security Applications Conference (ACSAC 2020), online</i> Distinguished Paper with Artifacts
Nov 2020	<b>[5] Impersonation-as-a-Service: Characterizing the Emerging Criminal Infrastructure for User Impersonation at Scale</b> ( <a href="#">paper</a> ). MICHELE CAMPOBASSO, LUCA ALLODI; <i>2020 ACM SIGSAC Conference on Computer and Communications Security (CCS 2020), online</i> Mentioned in ACM CCS 2020 Highlights
Jul 2019	<b>CARONTE: a Crawler for Adversarial Resources Over Non-Trusted, high-profile Environments</b> ( <a href="#">paper</a> ). MICHELE CAMPOBASSO, LUCA ALLODI; <i>The 2019 IEEE European Symposium on Security and Privacy Workshops (EuroS&amp;PW) - 1<sup>st</sup> Workshop on Attackers and Cyber-Crime Operations, Stockholm, Sweden</i> 