



# Loïc MILLER

PhD student in Computer Science



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## About me

Hello, my name is Loïc Miller. I am a third year PhD student in Computer Science, in the Network research team at ICube. I have a great interest for security, and topics related to it. I am currently working on secure and leak-free workflows using cloud technologies, as well as policy verification techniques.

## Languages

French: Mother Tongue

English: Mother Tongue

German: Novice

## Research Interests

- Security
- BGP systems
- Access Control
- Microservices

## Research

- since 2018 PhD student in Computer Science [Network Research Team, ICube](#)  
Authentication and Authorization in Cloud Storage Systems.  
Supervised by Professor [Cristel Pelsser](#), Associate Professor [Antoine Gallais](#) and Associate Professor [Pascal Mérindol](#).
- Jan-Aug 2018 Final-year internship [Network Research Team, ICube](#)  
Study of BGP blackholing as an attack vector. Supervised by Professor [Cristel Pelsser](#) and Associate Professor [Stéphane Cateloin](#). [[Report](#)] [[Slides](#)].
- May-Jul 2017 Research internship [Network Research Team, ICube](#)  
Development of a BGP routing data analyser. Supervised by Professor [Cristel Pelsser](#).
- Jan-May 2017 Research project [Network Research Team, ICube](#)  
Security in the Internet of Things. Study of the inner workings of the IoT and related security research issues. Supervised by Associate Professor [Antoine Gallais](#).
- May-Jul 2016 Research internship [Network Research Team, ICube](#)  
Development of an IGP routing data analyser (includes an algorithm that computes the shortest paths in every network state generated by the analyser). Supervised by Associate Professor [Pascal Mérindol](#).

## Publications

- Dec 2020 [Towards Secure and Leak-Free Workflows Using Microservice Isolation](#) [arXiv](#)  
Loïc Miller, Pascal Mérindol, Antoine Gallais and Cristel Pelsser.
- Sep 2019 [A Taxonomy of Attacks using BGP Blackholing](#) [ESORICS](#)  
Loïc Miller and Cristel Pelsser. In European Symposium on Research in Computer Security (ESORICS 2019), (pp. 107-127), Luxembourg.

## Communications

- Oct 2019 [Securing Workflows using Microservices](#) [University of Strasbourg](#)  
Loïc Miller, Pascal Mérindol, Antoine Gallais and Cristel Pelsser. Poster and presentation at the poster days of the Doctoral School, Strasbourg, France.
- Sep 2019 [A Taxonomy of Attacks using BGP Blackholing](#) [ESORICS](#)  
Loïc Miller and Cristel Pelsser. In European Symposium on Research in Computer Security (ESORICS 2019), Luxembourg.
- Jun 2019 [Securing Workflows using the Microservices Architecture](#) [TMA](#)  
Loïc Miller, Pascal Mérindol, Antoine Gallais and Cristel Pelsser. Poster at the Network Traffic Measurement and Analysis conference (TMA 2019), Paris, France.
- Jan 2019 [BGP Blackholing Attack Defense](#) [RESCOM](#)  
Loïc Miller and Cristel Pelsser, Stéphane Cateloin. In Journées non-thématiques RESCOM (RESCOM 2019), Grenoble, France.



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## Teaching

- |  |   |                          |
|--|---|--------------------------|
| Jan- 2020  | <a href="#">Study and Research Work</a>               | University of Strasbourg |
| Two students (tutoring). Introduction to research, reading articles, presenting results, ...   |   |                          |
| Sep-Dec 2019   | <a href="#">Computer Architecture Basics</a>          | University of Strasbourg |
| 34 hours to second year undergraduate students; One work group (TD) and two practical work groups (TP). Introduction to computer architecture. Machine code and C programming. |   |                          |
| Sep-Dec 2019   | <a href="#">Data Structures and Algorithms 1</a>      | University of Strasbourg |
| 22 hours to second year undergraduate students; One work group (TD). Specifying and programming basic data structures and algorithms. C programming.                           |   |                          |
| Jan-May 2019   | <a href="#">Data Structures and Algorithms 2</a>      | University of Strasbourg |
| 24 hours to second year undergraduate students; Two practical work groups (TP). Specifying and programming data structures and algorithms. C programming.                      |   |                          |
| Sep-Dec 2018   | <a href="#">Computer Science Culture and Practice</a> | University of Strasbourg |
| 28 hours to first year undergraduate students; Two practical work groups (TP). How to interact with the Operating System, shell basics, shell scripts.                         |   |                          |

## Education

- |           |   |                            |
|-----------|---|----------------------------|
| 2016-2018 | Master's degree in Computer Science<br>Computer Networks and Embedded Systems.                          | University of Strasbourg   |
| 2013-2016 | Bachelor in Science, Technology and Health<br>Specialty in Computer Science.                            | University of Strasbourg   |
| 2012-2013 | Bachelor in Science, Technology and Health<br>Specialty in Extensive Mathematics and Physics (1st year) | University of Strasbourg   |
| 2012      | Baccalauréat (Equivalent to A levels)<br>Specialty in Physics   | Robert Schuman High School |

## Related Activities

### Reviews

- [Passive and Active Measurement](#) (PAM 2019).
- [ACM Internet Measurement Conference](#) (IMC 2019).
- [International Conference on emerging Networking EXperiments and Technologies](#) (CoNEXT 2019).

## Skills

- Languages: Python, Shell, C, Java, C++, SQL.
- Networking: IPv4/v6, routing (BGP, OSPF, RIP), MPLS, Ethernet, VLAN, TCP/IP.
- System: Linux, Windows, MySQL, monitoring.
- Security: authentication, authorization, policy, firewall, iptables, proxy, cryptography.