



## Lucian-Tudor Popa

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### ● WORK EXPERIENCE

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01/04/2018 – CURRENT Timisoara, Romania

#### **SYSTEM ENGINEER VEONEER ROMANIA**

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System requirements definition and system architecture development for Driver Monitoring System products. Support for System level FMEA.  
Involved in customer requirements analysis during quotation project for Driver Monitoring System.  
Elicitation of system requirements for current generation of Night Vision product.  
Updated the system requirements to have a well defined specification of the Night Vision product.  
Support for the development and testing teams in understanding the system requirements in order to have a complete implementation of the specification and to have a good overview of the system behavior.  
Support for complex investigations including DV/PV tests.

01/10/2021 – 15/12/2021 Timisoara, Romania

#### **RESEARCH ASSISTANT POLITEHNICA UNIVERSITY OF TIMISOARA**

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I have worked as research assistant in the "New concepts for Secure Connectivity Inside Cars" project.

01/08/2019 – 30/06/2020 Timisoara, Romania

#### **RESEARCH ASSISTANT POLITEHNICA UNIVERSITY OF TIMISOARA**

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I have worked as research assistant in the PRESENCE (PRivacy-Enabled, SEcured iNteractions between vehiCles and smart Electronic devices) project. PRESENCE is a two year research project funded by the Romanian National Authority for Scientific Research and Innovation (CNCS-UEFISCDI) for the establishment of young research teams (project no. PN-III-P1-1.1-TE-2016-1317 , 2018-2020)

01/06/2017 – 30/09/2017 Timisoara, Romania

#### **RESEARCH ASSISTANT POLITEHNICA UNIVERSITY OF TIMISOARA**

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Worked as research assistant in the CSEAMAN (Cryptographic Security for Automotive Embedded Devices and Networks) project for 4 months. CSEAMAN is a two year research project funded by the Romanian National Authority for Scientific Research and Innovation (CNCS-UEFISCDI) for the establishment of young research teams (project no. PN-II-RU-TE-2014-4-1501, contract no. 196/01/10/2015, 2015-2017).

01/04/2017 – 31/03/2018 Timisoara, Romania

#### **SYSTEM ENGINEER AUTOLIV ROMANIA**

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Analyze and discuss with the customer regarding the Night Vision product requirements.  
Update the system requirements to have a well defined specification of the Night Vision product.  
Support the development and testing team in understanding the system specifications for the updates that are required.  
Support the customer directly in case a severe problem is reported and a quick detailed overview is necessary.

01/10/2016 – 31/03/2017 Timisoara, Romania

#### **SOFTWARE ARCHITECT AUTOLIV ROMANIA**

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Update of software architecture plan for Automotive Nightvision products

Update software requirements for every platform based on system requirements and architecture plan  
Support in complex bug analysis, update of major components of the ECU (eg. microcontroller)  
Involvement in planning future releases and support for the software development team in their tasks

01/08/2015 – 30/09/2016 Timisoara, Romania

## SOFTWARE ENGINEER AUTOLIV ROMANIA

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Bug fixing, fault analysis and performance improvement for Automotive Night Vision software on several platforms.

Optimization of different modules on customer request.

Updates of AUTOSAR software using external tools

14/07/2014 – 31/07/2015 Timisoara, Romania

## SOFTWARE INTERN AUTOLIV ROMANIA

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Bug fixing, fault analysis and performance improvement for Automotive Nightvision software on several platforms.

Optimization of different modules on customer request.

Updates of AUTOSAR software using external tools

## ● EDUCATION AND TRAINING

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01/11/2018 – CURRENT Timisoara, Romania

### PHD STUDENT IN AUTOMOTIVE CYBERSECURITY Politehnica University of Timisoara

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**Address** Vasile Parvan Bvd. no. 2, 300223, Timisoara, Romania | **Website** <https://ac.upt.ro/> |

**Thesis** Physical Layer Security based on Timing and Voltage Features for Controller Area Networks

01/10/2015 – 31/07/2017 Timisoara, Romania

### MASTER'S DEGREE Politehnica University of Timisoara

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**Address** Vasile Parvan Bvd. no. 2, 300223, Timisoara, Romania | **Website** <https://ac.upt.ro/>

01/10/2011 – 31/07/2015 Timisoara, Romania

### BACHELOR'S DEGREE Politehnica University of Timisoara

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**Address** Vasile Parvan Bvd. no. 2, 300223, Timisoara, Romania | **Website** <https://ac.upt.ro/>

## ● LANGUAGE SKILLS

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Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	C1	C1	C1

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## ● DIGITAL SKILLS

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Good Listener & Good Communicator | Problem-solving and decision-making aptitude | Self motivated and a proven ability to work well as part of a team | Result Oriented

### Technical

Usage of cryptographic ciphers in computer security | Elliptic Curve Cryptography | System Design | CRYPTOGRAPHY : Symetric/asymmetric, Elliptic curves, PKI general use | ReqIF | System Architecture | Doors | System requirements specification | CodeBeamer | Controller Area Network (CAN) | System FMEA | Good knowledge of Embedded C/C++ | Enterprise Architect | Controller Area Network |

## ● ADDITIONAL INFORMATION

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### PUBLICATIONS

#### [INCANTA - INtrusion Detection in Controller Area Networks with Time-Covert Authentication](#) – 2019

Bogdan Groza, Lucian Popa, and Pal-Stefan Murvay. "INCANTA-INtrusion detection in Controller Area Networks with Time-covert Authentication". Security and Safety Interplay of Intelligent Software Systems. Springer, Cham, 2018, pp. 94-110.

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#### [Performance Evaluation of Elliptic Curve Libraries on Automotive-Grade Microcontrollers](#) – 2019

Lucian Popa, Bogdan Groza, and Pal-Stefan Murvay. "Performance evaluation of elliptic curve libraries on automotive-grade microcontrollers". Proceedings of the 14th International Conference on Availability, Reliability and Security, 2019.

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#### [TRICKS—Time TRiggered Covert Key Sharing for Controller Area Networks](#) – 2019

Bogdan Groza, Lucian Popa, and Pal-Stefan Murvay. "TRICKS—Time TRiggered Covert Key Sharing for Controller Area Networks". IEEE Access 7 (2019), pp. 104294-104307.

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#### [CarINA-Car sharing with IdeNtity based Access control re-enforced by TPM](#) – 2019

Bogdan Groza, Lucian Popa, Pal-Stefan Murvay. "CarINA-Car sharing with IdeNtity based Access control re-enforced by TPM". International Conference on Computer Safety, Reliability, and Security. Springer, Cham, 2019.

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#### [Accommodating Time-Triggered Authentication to FlexRay Demands](#) – 2019

Pal-Stefan Murvay, Lucian Popa, and Bogdan Groza. "Accommodating time-triggered authentication to FlexRay demands." Proceedings of the Third Central European Cybersecurity Conference, 2019.

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#### [Car-to-Smartphone Interactions: Experimental Setup, Risk Analysis and Security Technologies](#) – 2019

Bogdan Groza, Horatiu Gurban, Lucian Popa, Adriana Berdich, Pal-Stefan Murvay. "Car-to-Smartphone Interactions: Experimental Setup, Risk Analysis and Security Technologies." 5th International Workshop on Critical Automotive Applications: Robustness & Safety. 2019.

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#### [Highly Efficient Authentication for CAN by Identifier Reallocation With Ordered CMACs](#) – 2020

Bogdan Groza, Lucian Popa, Pal-Stefan Murvay. "Highly efficient authentication for CAN by identifier reallocation with ordered CMACs." IEEE Transactions on Vehicular Technology 69.6 (2020), pp. 6129-6140.

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#### [CANTO-Covert AutheNtication with Timing channels over Optimized traffic flows for CAN](#)

Bogdan Groza, Lucian Popa, and Pal-Stefan Murvay. "CANTO-Covert AutheNtication with Timing channels over Optimized traffic flows for CAN". IEEE Transactions on Information Forensics and Security 16 (2020), pp. 601-616.

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#### [Fast and Efficient Group Key Exchange in Controller Area Networks \(CAN\)](#) – 2021

Adrian Musuroi, Bogdan Groza, Lucian Popa, Pal-Stefan Murvay, "Fast and Efficient Group Key Exchange in Controller Area Networks (CAN)." IEEE Transactions on Vehicular Technology 70.9 (2021), pp. 9385 – 9399.

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#### [CANARY - a reactive defense mechanism for Controller Area Networks based on Active RelaYs](#) – 2021

Bogdan Groza, Lucian Popa, Pal-Stefan Murvay, Yuval Elovici, Asaf Shabtai. CANARY-a reactive defense mechanism for Controller Area Networks based on Active {RelaYs}. In 30th USENIX Security Symposium (USENIX Security 21) (pp. 4259-4276).

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#### [Securing the controller area network with covert voltage channels](#) – 2021

Pal-Stefan Murvay, Lucian Popa, Bogdan Groza. Securing the controller area network with Covert Voltage Channels. International Journal of Information Security (2021), pp. 1-15.

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#### [CAN-SQUARE-Decimeter Level Localization of Electronic Control Units on CAN Buses](#) – 2021

Bogdan Groza, Pal-Stefan Murvay, Lucian Popa, Camil Jichici. "CAN-SQUARE - Decimeter Level Localization of Electronic Control Units on CAN Buses", In European Symposium on Research in Computer Security (pp. 668-690), Lecture Notes in Computer Science, vol 12972. Springer, Cham, 2021.

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### [ECUPrint—Physical Fingerprinting Electronic Control Units on CAN Buses Inside Cars and SAE J1939 Compliant Vehicles](#)

– 2022

Lucian Popa, Bogdan Groza, Camil Jichici, Pal-Stefan Murvay. "ECUPrint - Physical Fingerprinting Electronic Control Units on CAN Buses inside Cars and SAE J1939 Compliant Vehicles". IEEE Transactions on Information Forensics and Security 17 (2022): 1185-1200.

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### [PanoptiCANS-Adversary-Resilient Architectures for Controller Area Networks](#) – 2022

Bogdan Groza, Lucian Popa, Tudor Andreica, Pal-Stefan Murvay, Asaf Shabtaj, Yuval Elovici, "PanoptiCANS – Adversary-resilient Architectures for Controller Area Networks", In European Symposium on Research in Computer Security 2022 (ESORICS 22).

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### [CarTwin—Development of a Digital Twin for a Real-World In-Vehicle CAN Network](#) – 2022

Lucian Popa, Adriana Berdich, and Bogdan Groza, "CarTwin—Development of a Digital Twin for a Real-World In-Vehicle CAN Network", Applied Sciences, vol. 13, no. 1, p. 445, 2022.

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### [Impact of Wiring Characteristics on Voltage-based Fingerprinting in Controller Area Networks](#) – 2023

Lucian Popa, Camil Jichici, Tudor Andreica, Pal-Stefan Murvay, and Bogdan Groza, "Impact of Wiring Characteristics on Voltage-based Fingerprinting in Controller Area Networks", May 2023, IEEE 17th International Symposium on Applied Computational Intelligence and Informatics (SACI 2023).

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## **PROJECTS**

15/09/2023 – CURRENT

**InoHubDoc POCU/993/6/13/153437 - Rețea de excelență în cercetare și inovare aplicativă pentru programele de studii doctorale și postdoctorale** Part of the target group of PhD students in the InoHubDoc project. The project timeline is a period of 12 months with PhD students and Post-Doctoral researchers from the Polytechnic University of Timișoara, the Technical University of Cluj-Napoca and the "Gheorghe Asachi" Technical University of Iasi.

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