Tudor-Sebastian Andreica

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WORK EXPERIENCE

11/2023 – CURRENT Timisoara, Romania
CYBERSECURITY ENGINEER ATS AUTOMOTIVE ENGINEERING

Main activities and responsibilities:
- Collaborate with OEMs and Tier-1 suppliers on cybersecurity activities, ensuring alignment with project objectives and industry standards
- Conduct security risk assessments to identify and mitigate potential vulnerabilities and threats in automotive systems
- Develop and adapt cybersecurity architecture to meet the specific requirements of each project
- Create system and software requirements with a focus on cybersecurity
- Communicate effectively with internal and external stakeholders to foster collaboration and ensure the successful implementation of cybersecurity measures

12/2019 – 10/2023 Timisoara, Romania
LEAD SYSTEM ENGINEER HELLA

Main activities and responsibilities:
- Overall technical contact person for the customer
- Perform requirements elicitation
- Create/adapt the System Architecture
- Responsible for System and Software requirements
- Develop and offer support for safety and security work products
- Offer support for development and testing teams on various technical topics
- Work in close cooperation with project managers, software project managers, requirements engineers and test managers

09/2017 – 11/2019 Timisoara, Romania
CYBERSECURITY ENGINEER HELLA

Main activities and responsibilities:
- Establish security development interface agreement with OEM
- Perform cybersecurity requirements elicitation
- Accountable in terms of system and software requirements, architecture, support for development and testing for the cybersecurity technical concepts, covering the following main areas:
    - Secure on-board communication
    - Secure programming
    - Secure diagnosis
    - Secure hardening
    - Secure production

01/2015 – 08/2017 Timisoara, Romania
SOFTWARE DEVELOPMENT ENGINEER HELLA

Main activities and responsibilities:
- Develop software code
- Maintain software source code files
- Perform MISRA check and code reviews

EDUCATION AND TRAINING

2018 – CURRENT Timisoara, Romania
PHD Politehnica University of Timisoara

Field of study Automotive Cybersecurity |

Thesis Enhanced Security Functionalities with Android Devices inside Vehicles

2016 – 2018 Timisoara, Romania
MASTER OF ENGINEERING (M.ENG.) Politehnica University of Timisoara

Field of study Automotive Embedded Software

2016 – 2018 Arad, Romania
MASTER'S DEGREE Aurel Vlaicu University of Arad

Field of study Management

2012 – 2016 Timisoara, Romania
BACHELOR OF ENGINEERING (B.ENG.) Politehnica University of Timisoara

Field of study Computer Science

LANGUAGE SKILLS

Mother tongue(s):   **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
GERMAN	B2	B2	B2	B2	B2

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

PUBLICATIONS

Blockchain Integration for in-Vehicle CAN Bus Intrusion Detection Systems with ISO/SAE 21434 Compliant Reporting

Tudor Andreica, Adrian Musuroi, Alfred Anistoroaei, Camil Jichici, and Bogdan Groza. "Blockchain Integration for in-Vehicle CAN Bus Intrusion Detection Systems with ISO/SAE 21434 Compliant Reporting," *Scientific Reports, 14:8169,* 2024.

Impact of Wiring Characteristics on Voltage-based Fingerprinting in Controller Area Networks

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

Android Head Units vs. In-Vehicle ECUs: Performance Assessment for Deploying In-Vehicle Intrusion Detection Systems for the CAN Bus

Tudor Andreica, Christian-Daniel Curiac, Camil Jichici, and Bogdan Groza. "Android Head Units vs. In-Vehicle ECUs: Performance Assessment for Deploying In-Vehicle Intrusion Detection Systems for the CAN Bus," *IEEE Access, 10:95161–95178,* 2022.

PanoptiCANs-Adversary-Resilient Architectures for Controller Area Networks

Bogdan Groza, Lucian Popa, **Tudor Andreica**, Pal-Stefan Murvay, Asaf Shabtai, and Yuval Elovici. "PanoptiCANs - Adversary-resilient Architectures for Controller Area Networks," *in Computer Security – ESORICS 2022, pages 658–679*, 2022.

Effective Intrusion Detection and Prevention for the Commercial Vehicle SAE J1939 CAN Bus

Camil Jichici, Bogdan Groza, Radu Ragobete, Pal-Stefan Murvay, and **Tudor Andreica**. "Effective Intrusion Detection and Prevention for the Commercial Vehicle SAE J1939 CAN Bus," *IEEE Transactions on Intelligent Transportation Systems, 23(10):17425–17439,* 2022.

Prestvo: Privacy enabled smartphone based access to vehicle on-board units

Bogdan Groza, **Tudor Andreica**, Adriana Berdich, Pal-Stefan Murvay, and Eugen Horatiu Gurban. "PRESTvO: Privacy Enabled Smartphone Based Access to Vehicle On-Board Units," *IEEE Access, 8:119105–119122,* 2020.

Secure V2V Communication with Identity-based Cryptography from License Plate Recognition

Tudor Andreica and Bogdan Groza. "Secure V2V Communication with Identity-based Cryptography from License Plate Recognition," *in 2019 Sixth International Conference on Internet of Things: Systems, Management and Security (IOTSMS), pages 366–373,* 2019.

Applications of pairing-based cryptography on automotive-grade microcontrollers

Tudor Andreica, Bogdan Groza, and Pal-Stefan Murvay. "Applications of Pairing-Based Cryptography on Automotive-Grade Microcontrollers," i*n Computer Safety, Reliability, and Security, pages 331–343,* 2018.

Designing Wireless Automotive Keys with Rights Sharing Capabilities on the MSP430 Microcontroller.

Bogdan Groza, **Tudor Andreica**, and Pal-Stefan Murvay. "Designing wireless automotive keys with rights sharing capabilities on the MSP430 microcontroller," *in International Conference on Vehicle Technology and Intelligent Transport Systems,* 2017.

Evaluating SRAM as Source for Fingerprints and Randomness on Automotive Grade Controllers.

Bogdan Groza, Pal-Stefan Murvay, and **Tudor Andreica**. "Evaluating SRAM as Source for Fingerprints and Randomness on Automotive Grade Controllers," *in Proceedings of the 13th International Joint Conference on E-Business and Telecommunications, page 109–120,* 2016.

PROJECTS

05/2018 – 04/2020
Privacy-Enabled, Secured Interactions between Vehicles and Smart Electronic Devices

Two year research project funded by the Romanian National Authority for Scientific Research and Innovation (CNCS-UEFISCDI)

Link https://www.aut.upt.ro/~bgroza/projects/presence/index.html

04/2016 – 07/2016
Cryptographic Security for Automotive Embedded Systems and Networks

Two year research project funded by the Romanian National Authority for Scientific Research and Innovation (CNCS-UEFISCDI)

Link https://www.aut.upt.ro/~bgroza/projects/cseaman/cseaman.html