Curriculum Vitae - Dario Stabili, Ph.D.

Contact Information:

University of Modena and Reggio Emilia
Department of Engineering "Enzo Ferrari"
Via Vivarelli 10, 41125 - Modena (MO), Italy

Homepage: *https://weblab.ing.unimore.it/people/stabili*
Email: *dario.stabili@unimore.it*

CV last updated: May 30, 2022

Research Interests:

- Automotive Cyber Security;
- Misbehavior Detection in Cooperative Intelligent Transportation Systems (C-ITS);
- Automotive Forensics;

Current position:

PostDoc in Automotive Cyber Security   03/2020 - *current*
Department of Engineering "Enzo Ferrari"
University of Modena and Reggio Emilia (Italy)

Experience:

Research grant on Automotive Cyber Security   08/2019 - *ongoing*
HiPeRTLab and Department of Physics, Informatics and Mathematics,
University of Modena and Reggio Emilia (Italy)
Supervisor: Prof. Marko Bertogna

Visiting Research Scholar at WashU   01/2019 - 07/2019
Department of Electrical and Systems Engineering
Washington University in St. Louis
One Brookings Drive, St. Louis, MO 63130
Supervisor: Prof. Bruno Sinopoli

Research grant on Automotive Cyber Security   07/2017 - 07/2019
CRIS and Department Engineering "Enzo Ferrari",
University of Modena and Reggio Emilia (Italy)
Supervisor: Prof. Mirco Marchetti

Research grant on Cloud Security   08/2016 - 07/2017
CRIS and Department Engineering "Enzo Ferrari",
University of Modena and Reggio Emilia (Italy)
Supervisor: Prof. Michele Colajanni

Education:	**Ph.D. in Computer Science**	10/2016 - 10/2019

Ph.D. in Computer Science 10/2016 - 10/2019
Department of Engineering "Enzo Ferrari"
University of Modena and Reggio Emilia (Italy)
Research Topic: Cyber security for automotive infrastructures and applications
Supervisors: Prof. Michele Colajanni and Prof. Mirco Marchetti

MSc in Computer Engineering and Science 2015
Department of Engineering "Enzo Ferrari"
University of Modena and Reggio Emilia (Italy)
Graduation score: **summa cum laude**
Average exam score: **29.4/30.0**
Supervisor: Prof. Michele Colajanni

BSc in Computer Engineering and Science 2013
Department of Engineering "Enzo Ferrari"
University of Modena and Reggio Emilia (Italy)
Graduation mark: **100/110**

Selected awards:

- **Best paper** and **best presentation** award at the *"2022 5th International Conference on Control, Robotics and Informatics"* 04/2022
- Passed the public exam to practice as *Computer Engineer* in Italy 07/2017
- Ranked 1st at *OCTONoMous Hackathon at Motorshow*, Bologna 12/2016

Publications:

Journal Papers
1. [TVT2022] D. Stabili, L. Ferretti, M. Andreolini, M. Marchetti **"DAGA: Detecting Attacks to in-vehicle networks via n-Gram Analysis"**, accepted for publication in *IEEE Transaction on Vehicular Technology*.
2. [TVT2021] F. Pollicino, D. Stabili, L. Ferretti, M. Marchetti **"Hardware limitations to secure C-ITS: experimental evaluation and solutions"**, in *IEEE Transaction on Vehicular Technology*, vol. 70, no. 12, pp. 12946-12959, Dec. 2021, doi: 10.1109/TVT.2021.3122333.
3. [TCPJ2020] T. Dagan, Y. Montvelisky, M. Marchetti, D. Stabili, M. Colajanni, A. Wool **"Vehicle Safe-Mode, Concept to practice. Limp-Mode in the service of Cyber Security"**, in *SAE J Transportation Cybersecurity and Privacy Journal*, Volume: 3, February 2020
4. [TIFS2019] M. Marchetti, D. Stabili **"READ: Reverse engineering of automotive dataframes"**, in *IEEE Transactions on Information Forensics and Security*, Volume: 14, Issue: 4, April 2019

Conference Papers
1. [VTC2022-Spring] F. Pollicino, D. Stabili, M. Marchetti **"On the effectiveness of BSM communications in V2V emergency scenarios"**, Proceedings of *IEEE Vehicular Technology Conference*, Helsinki (Finland), June 2022
2. [ICCRI2022] D. Stabili, R. Romagnoli, M. Marchetti, B. Sinopoli, M. Colajanni **"Exploring the consequences of cyber attacks on Powertrain Cyber Physical Systems"**, Proceedings of *2022 5th International Conference on Control, Robotics and Informatics*, Da Nang (Vietnam), April 2022 [Best paper and best presentation award]
3. [NCA2021] F. Pollicino, D. Stabili, M. Marchetti **"Accountable and privacy-aware flexible car sharing and rental services"**, Proceedings of *IEEE*

20th International Symposium on Network Computing and Applications (NCA), online, November 2021

4. [VTC2021-Spring] F. Pollicino, D. Stabili, G. Bella, M. Marchetti **"SixPack: Abusing ABS to avoid Misbehavior detection in VANETs"**, Proceedings of *IEEE Vehicular Technology Conference* online, April 2021

5. [VTC2020-Fall] F. Pollicino, D. Stabili, L. Ferretti, M. Marchetti **"An experimental analysis of ECQV performance on VANETs"**, Proceedings of *2020 IEEE 92th Vehicular Technology Conference* online, November 2020

6. [VTC2019-Fall] D. Stabili, M. Marchetti **"Detection of Missing CAN Messages through Inter-Arrival Time Analysis"**, Proceedings of *2019 IEEE 90th Vehicular Technology Conference* Honolulu, USA, Sept. 2019

7. [AUTOMOTIVE2018] G. Burzio, G. Faranda Cordella, M. Colajanni, M. Marchetti, D.Stabili **"Cybersecurity of Connected Autonomous Vehicles - A Ranking based approach"**, Proceedings of *AEIT International Conference of Electrical and Electronic Technologies for Automotive*, Milan Italy, July 2018

8. [ESCAR Europe 2017] T. Dagan, M. Marchetti, D.Stabili, M. Colajanni, A. Wool **"Vehicle Safe-Mode: Limp-Mode in the Service of Cyber Security"**, Proceedings of *15th Embedded Security in Cars Europe*, Berlin, Germany, November 2017

9. [AEIT2017] D.Stabili, M.Marchetti and M. Colajanni **"Detecting attacks to internal vehicle networks through Hamming distance"**, Proceedings of *IEEE 2017 AEIT International Annual Conference - Infrastructures for Energy and ICT*, Cagliari, Italy, September 2017

10. [IV2017] M. Marchetti, D.Stabili **"Anomaly detection of CAN bus messages through analysis of ID sequences"**, Proceedings of *28th IEEE Intelligent Vehicle Symposium*, Redondo Beach, California, USA, June 2017

11. [RTSI2016] M. Marchetti, D.Stabili, A. Guido and M. Colajanni **"Evaluation of anomaly detection for in-vehicle networks through information-theoretic algorithms"**, Proceedings of *2016 IEEE 2nd International Forum on Research and Technologies for Society and Industry Leveraging a better tomorrow*, Bologna, Italy, September 2016

Workshop Papers

1. [SIW2018] D.Stabili, L. Ferretti, M. Marchetti **"Analyses of secure automotive communications protocols and their impact on vehicles lifecycle"**, Proceedings of *IEEE Smart Industries Workshop*, in conjunction with the *4th IEEE International Conference on Smart Computing (SmartComp)*, Taormina, Italy, June 2018

Talks:
– Paper presentation at International Conference on Control, Robotics and Informatics, Da Nang (Vietnam), Apr 2022 [Best paper and best presentation award]
– Paper presentation at IEEE 2019 Vehicular Technology Conference, Honolulu, Hawaii (USA), Sept 2019
– Paper presentation at IEEE 2017 AEIT International Annual Conference, Cagliari, Italy, Sept 2017
– Paper presentation at IEEE Intelligent Vehicle Symposium, Redondo Beach, California (USA), Jun 2017

Teaching:
– Seminars for the *"Cyber-Physical Security"* class, BSc in Computer Engineering (Mantova), University of Modena, Italy   2020, 2021
– Seminars and T.A. for the *"Automotive Cyber security"* class (English), MSc in Computer Engineering, University of Modena, Italy   2019, 2020, 2021

- Seminars, T.A., and internal CTF co-organizer for the *"Information Security"* class, MSc in Computer Engineering, University of Modena, Italy   2018, 2019, 2020, 2021
- Module leader for the *"Cloud Systems Applications"* class, MSc in Computer Engineering, University of Modena, Italy   2020, 2021
- Guest lecturer for the module *"Big Data and IoT"*, for the "Project manager for the integration of innovative technologies for industrial production" course, Modena   a.y. 2017/2018
- Seminars and T.A. for the *"Networked Systems and Applications"* class, MSc in Computer Engineering, University of Modena, Italy   a.y. 2017/2018
- Seminars on the topic *Anomaly detection systems in industrial contexts*, for the class "Networked Systems and Applications", MSc in Computer Engineering, University of Modena, Italy   May 2016
- Seminars on the topic *Vehicular networks security*, for the class "Networked Systems and Applications", MSc in Computer Engineering, University of Modena, Italy   May 2016
- Seminars on the topic *"New challenges for cyber security on smart vehicles"* for the class "Networked Systems and Applications", MSc in Computer Engineering, University of Modena, Italy   May 2016

Academic Service:

Program Committee:
- Automotive Cyber Security Workshop (ACSW22), co-located with IEEE European Symposium on Security and Privacy (IEEE EuroS&P)   2022
- International Conference on Advances in Vehicular Systems, Technologies and Applications (VEHICULAR)   2022
- IEEE Network Computing and Applications (NCA)   2020, 2021

Technical program Committee:
- IEEE Network Computing and Applications (NCA)   2019, 2020, 2021
- International Conference on Advances in Vehicular Systems, Technologies and Applications (VEHICULAR)   2021
- IEEE Vehicular Technology Conference   2019, 2020, 2022

Review Service:
- ACM Transactions on Cyber-Physical Systems   2019, 2021
- Elsevier Expert Systems with Applications Journal   2019, 2020, 2021
- Elsevier Journal of Information Security and Applications   2020, 2021
- IEEE Access   2020, 2021, 2022
- IEEE Design and Test Journal   2019, 2020
- IEEE Systems Journal   2019
- IEEE Transactions on Network and Service Management   2020, 2021
- IEEE Transactions on Vehicular Technologies   2022
- IEEE Vehicular Technology Conference   2019, 2020, 2021
- International Conference on Vehicle Technology and Intelligent Transport Systems (VEHITS)   2021
- Springer Information Systems Frontiers   2020

European projects:
- *"COSCA: COnceptualising Secure CArs"*, Ref. H2020, Grant Agreement: 825618 2020 - 2022
- *"SECREDAS: Cyber Security for Cross Domain Reliable Dependable Automated Systems"*, Ref. H2020, Grant Agreement: 783119   2019 - 2020

- *"ASGARD: Analysis System for Gathered Raw Data"*, Ref. H2020 Grant agreement: 700381   2016 - 2020
- *"Il futuro dei veicoli a guida autonoma: soluzioni tecnologiche e profili etico normativi per garantire resilienza a errori umani e attacchi cyber"*, FAR2017 2018 - 2019
- *EUOF2CEN: European On-line Fraud Cyber Centre and Expert Network*, Ref. HOME/2014/ISFP/AG/CYBR/7172   2015 - 2017