Ion Turcanu

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Employment History

- **Luxembourg Institute of Science and Technology** Luxembourg
  Research and Technology Associate, ITIS *10.2021-present*
    - Carrying out research on the following topics: 5G/6G, Multi-Technology Vehicular Networks, Connected and Autonomous Vehicles, Cooperative Intelligent Transportation Systems, In-Vehicle Networks (Automotive Ethernet, CAN), Time-Sensitive Networking;
    - Acquiring new projects;

- **University of Luxembourg** Luxembourg
  Postdoc/Research Associate, SnT *09.2017-09.2021*
    - Deputy head of VehicularLab (https://vehicularlab.uni.lu/)
    - Working on several European- and national-funded projects;
    - Acquiring new projects;
    - Teaching and supervising students.

Education

- **University of Rome Sapienza** Rome, Italy
  Ph.D. *2014 - 2018*
    - Domain: Information and Communications Technologies (ICT)
    - Thesis: Integrated Wireless Access and Networking to Support Floating Car Data Collection in Vehicular Networks
    - Supervisor: Prof. Andrea Baiocchi

- **University of Rome Sapienza** Rome, Italy
  M.Sc. *2012 - 2014*
    - Domain: Engineering in Computer Science
    - Thesis: Design and performance analysis of data dissemination and collection scheme for VANET in real urban scenarios

- **University of Rome Sapienza** Rome, Italy
  B.Sc. *2007 - 2011*
    - Domain: Engineering in Computer Science
    - Thesis: Web Server Traffic Analyzer

Project Acquisition & Participation

- **Project name:** SETICA–SEcuring TIme Critical traffic in (next gen) Automotive networks (link)
  Funding: Luxembourg National Research Fund (FNR) and Honda R&D Europe Germany, 567 k€
  Duration: 01.06.2021 – 31.05.2024
  My role: Co-author, WP leader, PhD student co-supervisor, Participant
  Description: The goal of the SETICA project is to develop a realistic in-vehicle security-enabled TSN testbed and evaluate security-related issues in gPTP and TSN. The impact of successful attacks against gPTP is severe because many safety-critical applications depend on timing guarantees. The project will research novel approaches that go beyond 802.1DG, among them leveraging SDN for gaining even more flexibility and security.

- **Project name:** NEWFOCUS–European Network on Future Generation Optical Wireless Communication Technologies (link)
  Funding: EU COST Action
  Duration: 08.09.2020 – 07.09.2024
  My role: Management Committee Substitute, Participant
  Description: This project focuses on establishing optical wireless communications (OWC) as an efficient technology that can satisfy the demanding requirements of backhaul and access network levels in beyond 5G networks.

- **Project name:** Evaluating Practical Attacks against TSN in a TSN-enabled Testbed
  Funding: Honda R&D Europe Germany, 25 k€
  Duration: 01.01.2020 – 31.03.2020
  My role: Co-author, WP leader, Participant
  Description: In this project we mounted and analyzed a number of practical attacks against TSN in a TSN-enabled testbed.

- **Project name:** 5G-MOBIX (link)
  Funding: EU H2020
  Duration: 01.11.2018 – 31.10.2021
  My role: Participant
  Description: 5G-MOBIX aims at executing CCAM trials along x-border and urban corridors using 5G core technological innovations to qualify the 5G infrastructure and evaluate its benefits in the CCAM context, as well as defining deployment scenarios, identifying and responding to standardization and spectrum gaps.

- **Project name:** 5G-DRIVE (link)
  Funding: EU H2020
  Duration: 01.09.2018 – 28.02.2021
  My role: Participant
  Description: 5G-DRIVE focuses on trial and validation of the interoperability between EU & China 5G networks operating at 3.5 GHz bands for enhanced Mobile Broadband (eMBB) and 3.5 & 5.9 GHz bands for V2X scenarios.

- **Project name:** Building an In-Car Ethernet Testbed System
  Funding: Honda Initiation Grant Europe, 30 k€
  Duration: 01.05.2018 – 30.04.2019
  My role: Co-author, Master thesis co-supervisor, Participant
  Description: This project focused on building and validating an AVB/TSN testbed using open-source software (OpenAvnu) and commodity hardware.

- **Project name:** FCD4ITS–Floating Car Data Collection for Intelligent Transportation Systems
  Funding: EU H2020 RAWFIE 3rd Open Call, 100 k€
  Duration: 01.03.2018 – 31.12.2018
  My role: Author, WP leader, Participant

Description: This project deployed and executed a set of V2X experiments using the RAWFIE vehicular testbeds to evaluate the performance of several Floating Car Data collection algorithms, in order to understand their properties in real-world settings.

- **Project name:** CONTACT–Context and Content Aware Communications for QoS support in VANETs (link)
  Funding: Luxembourg National Research Fund (FNR)
  Duration: 01.04.2016 – 31.03.2020
  My role: Participant
  Description: This project focused on enabling Quality of Service (QoS) support in VANETs by taking a multi-pronged, cross-layer approach, and developing a set of communication techniques, which efficiently adapt to the highly volatile and unstable vehicular environment, content attributes and properties, and application performance requirements. In particular, it investigated the use of three different approaches: Content-Centric Networking (CCN), Software Defined Networking (SDN), and Floating Content (FC).

- **Project name:** F-Interop
  Funding: EU H2020
  Duration: 01.11.2015 – 30.09.2018
  My role: Task leader, Participant
  Description: F-Interop developed a set of remotely accessible IoT tools – such as interoperability and validation tools, remote compliance and conformance tests, scalability and QoS tests, SDN/NFV interoperability tools, online privacy test tools, and energy efficiency tools – to support and accelerate standardization processes and products developments.

Other Activities

- **Standardization:**
  - Rapporteur of ETSI GR IP6 030 "IPv6-based Vehicular Networking (V2X)" (link)

- **Teaching:**
  - Lecturer of the "Networking and Communications" class for Bachelor in Computer Science, University of Luxembourg (2019-present);
  - Delivered teaching lectures on "Selected Topics in Network and System Security" to Master students in Computer Science and PhD students at University of Luxembourg (2017-2018);
  - Delivered teaching lectures on "Laboratory of Network Traffic Engineering" (A.Y. 2016/2017) to students enrolled in Master-level programs at University of Rome Sapienza.

- **Reviewer Activities:**
  - **Technical Program Committee:** IEEE WCNC 2022, IEEE VNC 2021, IEEE/IFIP WONS 2021, IEEE ISC2 2021, MedComNet 2020, ANT (2020,2019), IEEE CCNC 2020, VEHICULAR (2019, 2018, 2017), 5G-Auto (2019, 2018);

- **Participation (presenter) in international networking events:**
  - IEEE Vehicular Technology Conference (VTC2022-Spring), Helsinki, Finland
  - Smart City Expo World Congress 2021, Barcelona, Spain
  - IEEE Vehicular Networking Conference (VNC) 2021, Online Event
  - 19th Mediterranean Communication and Computer Networking Conference (MedComNet 2021), Online Event
  - IEEE Vehicular Networking Conference (VNC) 2020, Online Event
  - IEEE Vehicular Networking Conference (VNC) 2019, Los Angeles, CA, USA

- IEEE Vehicular Technology Conference (VTC-Fall) 2019, Honolulu, Hawaii, USA
- IEEE Vehicular Networking Conference (VNC) 2018, Taipei, Taiwan
- IEEE Vehicular Networking Conference (VNC) 2016, Columbus, OH, USA
- ACM International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (MobiHoc) 2016, Paderborn, Germany
- ACM International Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks (PE-WASUN) 2015, Cancun, Mexico

Further Education & International Experience

- **King's College London**   London, UK
  Summer School on 5G V2X Communications   *11.06.2018 - 12.06.2018*
  - Attending a two-day summer school on various aspects of 5G V2X Communications, as pertained to connect autonomous driving.

- **BMW Summer School 2017**   Bad Wörishofen, Bavaria, Germany
  BMW Summer School 2017: Intelligent Cars on Digital Roads   *09.07.2017-14.07.2017*
  - Attending a six-day summer school jointly organized by BMW Group Research and Technology, EURECOM and the Technische Universität München (TUM), with the support of Bayerisch-Französisches Hochschulzentrum (BFHZ).

- **University of Paderborn**   Paderborn, Germany
  Visiting Scholar   *03.2016 - 09.2016*
  - Working on Floating Car Data collection algorithms using Heterogeneous LTE/DSRC Vehicular Networks with application on Traffic Monitoring Systems at Heinz Nixdorf Institute and Department of Computer Science under the supervision of Prof. Falko Dressler.

- **Graz University of Technology**   Graz, Austria
  International Summer School on Smart Cars (IS3C)   *06.09.2015-12.09.2015*
  - Attending a one-week summer school organized by Graz University of Technology. The goal of this summer school was to survey fundamental and applied aspects of embedded automotive computing and networking for Smart Cars, as well as to identify novel opportunities and research directions in related areas through a series of lectures held by international experts.

- **University of Trento**   Trento, Italy
  First IEEE ComSoc Summer School   *06.07.2015-09.07.2015*
  - Attending a four-day summer school on wireless communications, organized by IEEE Communications Society.

Skills

- **Language:** Romanian (native language), English (fluent), Italian (fluent), Russian (proficient), French (beginner).

- **Computer/Software:** Network and mobility simulation, OMNeT++, INET, SUMO, Veins, OpenC2X, OpenAvnu, C/C++, Python, R, Matlab.