PERSONAL INFORMATION

Igor Zavalyshyn

📍 Rue de la Cle 21, b5, 1000 Brussels,Belgium

📱 +32 497243969

✉ zavalyshyn@gmail.com

Github: https://github.com/zavalyshyn

INTERESTS

Distributed Systems, Internet of Things; End-to-end Privacy and Security, Fault-tolerance and Resiliance

TECH SKILLS

Java, Javascript, Node.js, React.js, Python, Docker, Linux

PROJECTS

- Designed & implemented a privacy-aware IoT data processing pipeline for untrusted 3rd party cloud environment.
  Tech stack: Docker, Intel SGX, Node.js, React.js, Javascript
- Designed and implemented a privacy-aware smart IoT hub and an "appified" plarform for it.
  Tech stack: Java, Python
- Explored techniques to provide privacy guarantees in IoT data processing with presence of untrusted 3rd parties.
  Tech stack: Java, Face & Speech Recognition ML
- Designed and implemented algorithms for efficient communication in wireless mesh and personal area networks.
  Tech stack: Lua, OpenWRT, Java, Android SDK
- **Contributed to open-souce projects: OpenWRT OS, Graphene-SGX Library OS**

EDUCATION

Sep 2015 – Sep 2021   Ph.D, Erasmus Mundus Joint Doctorate in Distributed Computing

Instituto Superior Tecnico (IST), Portugal & Université Catholique de Louvain (UCLouvain), Belgium

The research is focused on privacy and security issues of IoT technologies and aims to provide secure and privacy-aware platforms for smart homes and smart cities. The contributions are mainly focused on information flow control in popular commercial smart home platforms.

Thesis topic: "Building Private-by-Design IoT Systems"

Sep 2013 – Sep 2015   MSc: European Master in Distributed Computing

Royal Institute of Technology (KTH, Sweden) & Universitat Politècnica de Catalunya (UPC, Spain)

The specific profiles of the master addressed two different sets of concerns in design, development, evaluation, and evolution of distributed computing systems: overall system reliability (fault-tolerance, interoperability, autonomic systems) as well as performance and scalability (performance measurement, tuning, large-scale systems).

Thesis topic: "Distributed Channel Assignment in Multi-Radio Multi-Channel Wireless Mesh Networks"

Qualification: 9.5, Excellent

Sep 2004 – Aug 2008   BSc: Bachelor Degree in Telecommunications

Odessa National Academy of Telecommunications after O.S. Popov, Ukraine

Main courses were focused on theory of electronic communication, fundamental electronic principles, data transfer methods and equipment, architecture of different types of data networks and their management. During my studies there, I was ranked among top ten students and obtained a monthly scholarship.

Qualification: 10, Awarded Honours Degree and Scholarship

WORK EXPERIENCE

Sep 2021 – Present	**Postdoc Researcher & Engineer**
	UCLouvain, Belgium
	Building a secure and privacy-aware IoT system for elderly users in collaboration with Innoviris Brussels and several industrial partners.
Sep 2011 – Aug 2013	**Quality Assurance Engineer**
	Shape.ag
	Customer support and manual testing of mobile and desktop applications
Aug 2009 – Aug 2011	**NOC Engineer**
	Speedflow Communications LTD
	Customer support and VoIP system monitoring & troubleshooting.

VOLUNTEER EXPERIENCE

- **Make a Mark Brussels 2020**
  With a team of 4 volunteers we designed and implemented a website for a local tour guide who shows the hidden secrets of Brussels and introduces to local small shop owners and business.

HONORS AND AWARDS

- **Best Student Paper Award** at SECRYPT 2018 conference, Porto, Portugal
- Eurosys 2018 Shadow PC **Travel Grant**, Porto, Portugal
- Eurosys 2017 **Travel Grant**, Belgrad, Serbia
- Erasmus Mundus Joint Doctorate in Distributed Computing (EMJD-DC) **Fellowship** (3 years)
- Erasmus Master in Distributed Computing (EMDC) **Fellowship** (2 years)

PUBLICATIONS

- **Flowverine: Leveraging Dataflow Programming for Building Privacy-Sensitive Android Apps**
  Eduardo Gomes, Igor Zavalyshyn, Nuno Santos, João Silva and Axel Legay
  Proceedings of IEEE TrustCom, 2020

- **My House, My Rules: A Private-by-Design Smart Home Platform**
  Igor Zavalyshyn, Nuno Santos, Ramin Sadre and Axel Legay
  Proceedings of 17th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (Mobiquitous'20), 2020

- **HomePad: A Privacy-aware Smart Hub for Home Environments**
  Igor Zavalyshyn, Nuno O. Duarte, Nuno Santos
  Proceedings of the Third ACM/IEEE Symposium on Edge Computing (SEC), 2018

- **An Extended Case Study about Securing Smart Home Hubs through N-Version Programming**
  Igor Zavalyshyn, Nuno O. Duarte, Nuno Santos
  Proceedings of 15th International Conference on Security and Cryptography (SECRYPT), 2018
  Best Student Paper Award

- **Efficient Location-aware Message Delivery for Encounter Networks**
  Igor Zavalyshyn, Nuno O. Duarte, Nuno Santos
  Proceedings of Inforum, 2016