

## Xu Tao

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### CONTACT INFORMATION

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### EDUCATION

Doctoral Student in Computer Science  
Advisor: Dr. Simone Silvestri  
**University of Kentucky, USA.**

**August 2021 - Present**

Master of Science in Computer Engineering **April 2018**  
**Politecnico di Torino**, Italy. Full scholarship awarded.  
**Saint Louis University**, USA. Master thesis development.  
**Title of Thesis:** A Policy-Based Architecture for Container Migration in Software Defined Infrastructures.  
**Advisors:** Flavio Esposito, Saint Louis University, USA. Guido Marchetto, Politecnico di Torino, Italy

Bachelor of Science in Computer Engineering  
**Politecnico di Torino**, Italy.

**July 2015**

### RELEVANT WORKING EXPERIENCE

**LINKS Foundation, Italy** (Researcher)  
(formerly Istituto Superiore Mario Boella, Italy)

**May 2018 - August 2021**

A research and innovation centre operating in the Information and Communication Technologies (ICT) domain. (<https://linksfoundation.com/en/>).

**Research area:** IoT & Pervasive Technologies.

- (May 2021 - August 2021) Participate in the on-going EU funded H2020 project KnowlEdge with the aim to provide solutions for the AI-powered manufacturing services, processes, and products in an edge-to-cloud-knowledge continuum for humans [in-the-loop].

*Technologies: Python, Statistics, Pandas*

- (May 2018 - May 2021) Participate in the EU-funded H2020 project BRAIN-IoT with the aim to provide a framework and methodology that supports smart autonomous and cooperative behaviors of heterogeneous IoT devices and platforms which are also closely interacting with Cyber-Physical systems (CPS).

*Technologies: IoT middleware, Cyber-Physical systems, REST Service, MQTT, OSGi Alliance, W3C Web of Things, Eclipse sensiNact, Eclipse Papyrus Modeling environment, Robot Operating System, Machine Learning.*

**Saint Louis University, USA**(Visiting Scholar)

**Aug 2017 - Feb 2018**

Master thesis research and development of a policy-based programmable container migration architecture, in particular:

- System architecture design.
- Software-defined measurement system development leveraging SDN controller.
- Migration protocol design.
- Policy-based migration algorithm development.
- Use case policies performance experiment within SDN-based prototype over MININET and GENI.

*Technologies: Java, Python, SDN Floodlight controller, Mininet, Eclipses, VirtualBox, MySQL, Linux, REST Service, OpenFlow, GINI.*

**Seica**, Italy (Software Development Intern)

**Mar 2017 - May 2017**

A global supplier of automatic test equipment and selective soldering system. (<https://www.seica.com/>)  
Software developer of a Cloud Bridge for Automation Smart Home System.

**Department of Computer Engineering**, Politecnico di Torino, Italy

**Sept 2016 - Feb 2017**

Laboratory Assistant of Computer Network Technologies and Services.

PERSONAL SKILLS  
AND COMPETENCES

**Programming languages:** Python, Java, C/C++, PHP, HTML, Javascript, SQL, XML, CSS.

**Database:** MySQL, Oracle

**Virtualization Tools:** VirtualBox, Docker

**Programming skills:** REST Service, Socket Programming, Docker Container, Software Defined Networking, Concurrent Threads Programming, Distributed Programming

**Platforms:** Unix, Windows

**Languages:** Chinese (native), English (fluent), Italian(basic)

PUBLICATIONS

**Xu, Tao**, and Simone Silvestri. "Integrating UAV and LoRaWAN in WSN for Intelligent Monitoring in Large-scale Rural Farms." 2023 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops). IEEE, 2023.

Salim Chehida, Saddek Bensalem, Davide Conzon, Enrico Ferrera, **Xu Tao**. "BRAIN-IoT Architecture and Platform for Building IoT Systems" in 7th International Conference on Internet of Things, Big Data and Security (IoTBDs) 2022.

**Xu Tao**, Davide Conzon, Enrico Ferrera, Laurent Maillet-Contoz, Emmanuel Michel, Mario Diaz-Nava, Shuai Li, AbdelHakim Baouya, Salim Chehida, Juergen Goetz, "Model Based Methodology and Framework for Design and Management of Next-Gen IoT Systems" in Proceedings of the 1st Eclipse Research International Conference on Security, Artificial Intelligence and Modelling for the next generation Internet of Things (SAMIoT), 2020.

Rui Zhao, **Xu Tao**, Davide Conzon, Enrico Ferrera, "A Cross-platform Communication Mechanism for ROS-based Cyber-physical System" in Proceedings of the 1st Eclipse Research International Conference on Security, Artificial Intelligence and Modelling for the next generation Internet of Things (SAMIoT), 2020.

Enrico Ferrera, **Xu Tao**, Davide Conzon, Victor Pombo, Miquel Cantero, Tim Ward, Ilaria Bosi, Mirko Sandretto, "BRAIN-IoT: Paving the Way for Next-Generation Internet of Things" in Proceedings of the 5th International Conference on Internet of Things, Big Data and Security(IoTBDS), 2020.

Mohammad Rifat Ahmmad Rashid, Davide Conzon, **Xu Tao**, Enrico Ferrera, "Privacy Awareness for IoT Platforms: BRAIN-IoT Approach" in Volume 27: Security and Privacy in the Internet of Things: Challenges and Solutions. Published 2020. Editors José Luis Hernández Ramos, Antonio Skarmeta. ISBN 978-1-64368-052-1 (print), 978-1-64368-053-8 (online) 2020.

Richard Nicholson, Timothy Ward, Derek Baum, **Xu Tao**, Davide Conzon, Enrico Ferrera. "Dynamic fog computing platform for event-driven deployment and orchestration of distributed Internet of Things applications" in 3rd World Conference on Smart Trends in Systems Security and Sustainability (WorldS4), 2020.

Davide Conzon, Mohammad Rifat Ahmmad Rashid, **Xu Tao**, Enrico Ferrera. "BRAIN-IoT: Model-Based Framework for Dependable Sensing and Actuation in Intelligent Decentralized IoT Systems" in 4th International Conference on Computing, Communications and Security (ICCCS) 2019.

**Xu Tao**, Flavio Esposito, Guido Marchetto. "A Policy-Based Architecture for Container Migration in Software Defined Infrastructures" in 5th IEEE Conference on Network Softwarization (IEEE NetSoft) 2019.