

Xu Tao

CONTACT INFORMATION

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Lexington, KY 40508

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EDUCATION

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

Aug 2021 - Present

Master of Science in Computer Engineering
Politecnico di Torino, Italy. Full scholarship awarded.

April 2018

Saint Louis University, USA. Master Thesis.

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

Department of Computer Science, University of Kentucky, USA

Sep 2022 - Present

Research Assistant on NSF-funded projects centered around advancing smart agriculture technologies.

Department of Computer Science, University of Kentucky, USA

Sep 2021 - May 2022

Teaching Assistant of Introduction to Computers (CS 101).

LINKS Foundation, Italy (Researcher)

May 2018 - Aug 2021

(formerly Istituto Superiore Mario Boella, Italy)

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

Research area: IoT & Pervasive Technologies.

- Participate in the 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].

- 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).

Saint Louis University, USA(Visiting Scholar)

Aug 2017 - Feb 2018

Master thesis research and development of a policy-based architecture for container migration in software defined infrastructures.

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 development of a cloud bridge for automation smart home systems.

Department of Computer Engineering, Politecnico di Torino, Italy

Sept 2016 - Feb 2017

Laboratory Assistant of Computer Network Technologies and Services.

SELECTED PUBLICATIONS

Book Chapters

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. 2020. ISBN 978-1-64368-052-1.

Peer-Reviewed Journal Articles

Xu Tao, Doriana Monaco, Alessio Sacco, Simone Silvestri, and Guido Marchetto, “Delay-Aware Routing in Software-Defined Networks via Network Tomography and Reinforcement Learning“ in IEEE Transactions on Network Science and Engineering (TNSE), 2024.

Conference Proceedings

10. **Xu Tao**, Jackson Butcher, Simone Silvestri and Flavio Esposito. “iCrop: Enabling High-Precision Crop Disease Detection via LoRa Technology“ in IEEE International Conference on Computer Communications and Networks (ICCCN), 2024.

9. **Xu Tao**, Evan Damron, and Simone Silvestri. “High-Precision Crop Monitoring Through UAV-Aided Sensor Data Collection“ in IEEE International Conference on Communications (ICC), 2024.

8. **Xu Tao** and Simone Silvestri. “Network Tomography and Reinforcement Learning for Efficient Routing“ in IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS), 2023.

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

6. **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 Eclipse Research International Conference on Security, Artificial Intelligence and Modelling for the next generation Internet of Things (SAMIoT), 2020.

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

4. 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 International Conference on Internet of Things, Big Data and Security (IoTBDs), 2020.

3. 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 World Conference on Smart Trends in Systems Security and Sustainability (WorldS4), 2020.

2. 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 International Conference on Computing, Communications and Security (ICCCS) 2019.

1. **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.

Abstracts

Xu Tao, and Simone Silvestri. “Integrating UAV and LoRaWAN in WSN for Intelligent Monitoring in Large-scale Rural Farms“ in IEEE International Conference on Pervasive Computing and

Communications (PerCom Workshops PhD Forum), 2023.

Awards

Cyber Physical Systems (CPS) Rising Stars (36 out of 220) **2024**
(<https://risingstars.linklab.virginia.edu/2024/participants.html>)

Thaddeus B. Curtz Memorial Scholarship, Department of University of Kentucky, USA. **2024**

NSF Student Travel Grant Award

- IEEE Percom Conference, 2024
- IEEE ICNP Conference, 2023
- IEEE PerCom Conference, 2023
- Colosseum Young Gladiators Training (Northeastern University, Boston, USA), 2023

Mentorship

Stefano Bassino, visiting master student, Politecnico di Torino, Italy. **Dec 2023 - present**
Evan Damron, Undergraduate Student, Computer Science at UKY. **May 2023 - present**
Jackson Butcher, Undergraduate Student, Computer Science at UKY. **May 2022 - present**
Christian Cumini, visiting master student, Politecnico di Torino, Italy. **Oct 2023 - Mar 2024**
Yenchia Yu, Intern, LINKS Foundation, Turin, Italy. **Jan 2020 - Jun 2020**
(Now PhD student at Politecnico di Torino, Italy.)

Professional Activities

Journal Reviews

IEEE Transactions on Network Science and Engineering
Ad Hoc Networks

Conference Paper Peer Reviews

IEEE International Conference on Pervasive Computing and Communications (PerCom)
IEEE International Conference on Distributed Computing Systems (ICDCS)
IEEE Global Communications Conference (GLOBECOM)
IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS)
IEEE International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS)
IEEE International Conference on Sensing, Communication, and Networking (SECON)
IEEE International Conference on Communications (ICC)
IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (LCN)
IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoW-MoM)
IEEE Consumer Communications & Networking Conference (CCNC)
IEEE Wireless Communications and Networking Conference (WCNC)
IFIP Network Operations and Management Symposium (IEEE/IFIP NOMS)