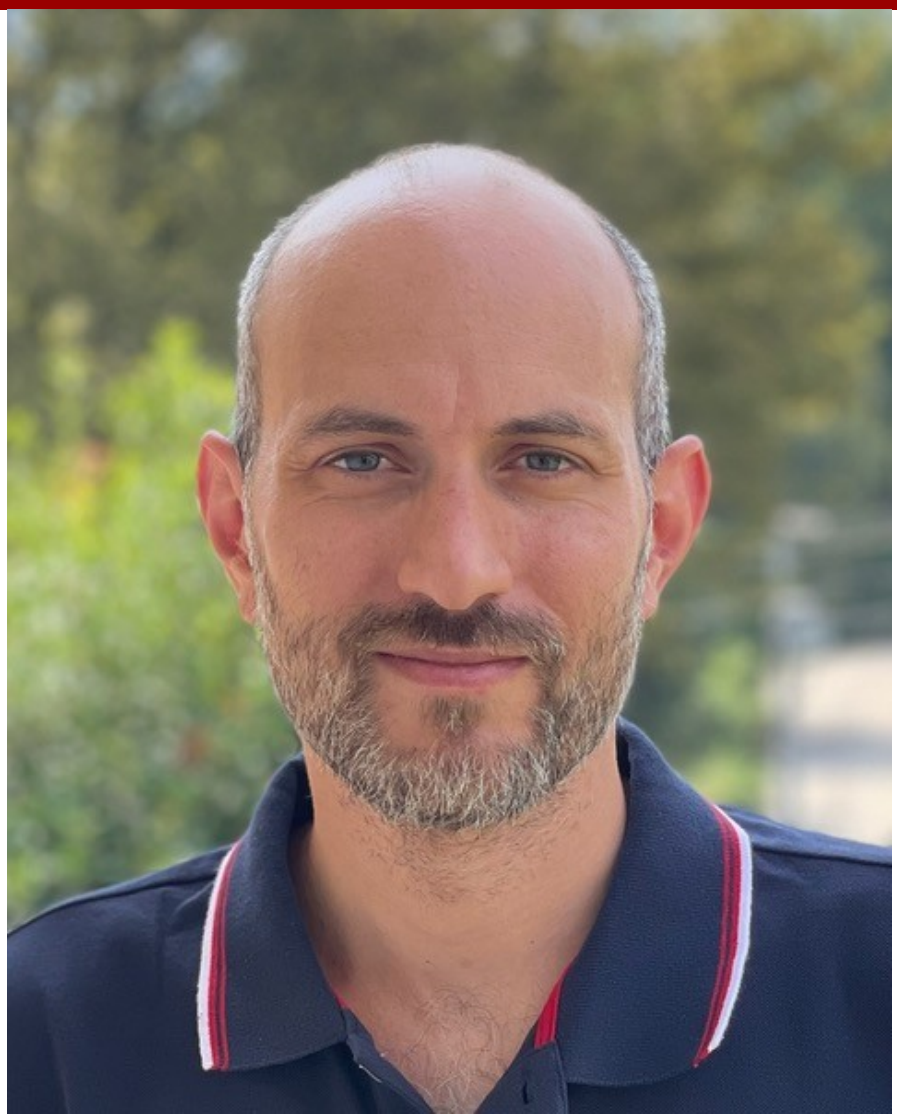
Inaugural lecture
Xenofon Fafoutis

"Wireless Embedded Systems: From Smart Dust to Embedded Intelligence"

Friday 28 March 2025 from 15:00 to 16:00



"Wireless Embedded Systems: From Smart Dust to Embedded Intelligence"

DTU Compute is pleased to invite all interested parties to welcome Xenofon Fafoutis as professor in Networked Embedded Computer Systems.

Xenofon's inaugural lecture will take place on:

Friday 28 March 2025 from 15:00 to 16:00

Building 101, Room M1
Anker Engelundsvej,
2800 Kgs. Lyngby

The lecture is followed by a reception from 16:00 to 17:00.

We look forward to celebrating Xenofon and seeing all of you.

Best regards,
DTU Compute
Jan Madsen, Head of Department

DTU Compute
Richard Petersens Plads
Bygning 324
2800 Kgs. Lyngby

Abstract

Over the last decades, wireless embedded systems have emerged as a key enabling technology for the digital transformation of a vast number of industries, ranging from environmental monitoring to healthcare and from smart buildings to industrial automation. Wireless embedded systems are essentially small computers with cyber-physical capabilities that allow them to perceive and influence the physical world (via sensors and actuators), equipped with wireless interfaces that allow them to form collaborating networks or communicate with the outer world and the Internet of Things. Despite their limited energy budgets and computing resources, these systems are becoming increasingly more sophisticated and capable to perform complex tasks. In this lecture, I will attempt to provide a brief history of the developments in Wireless Embedded Systems over the last decades, focusing on a retrospection of my personal path in the field that led me to this privileged position. I will discuss about attempts to replace batteries with a greener alternative: energy harvesting. I will discuss about the challenges of developing and deploying such systems in the real world at relatively large scale. Finally, I will also discuss about the transformation of those systems from simple data collection devices to complex intelligent systems capable for on-device knowledge extraction and autonomous decision making through embedded machine learning.

Biography

Xenofon (Fontas) Fafoutis is a faculty member of DTU Compute and its section for Embedded Systems Engineering (ESE) since 2018.

From 2014 to 2018, he held various researcher positions at the School of Electrical, Electronic and Mechanical Engineering of the University of Bristol and he was a core member of SPHERE: UK's flagship Interdisciplinary Research Collaboration (IRC) on Healthcare Technologies.

He holds a PhD from DTU Compute (2014), an MSc in Computer Science from the University of Crete (2010), and an BSc in Informatics and Telecommunications from the University of Athens (2007). He was also associated with the Institute of Computer Science of the Foundation for Research and Technology – Hellas (ICS-FORTH). His research interests are in the areas of Wireless Embedded Systems, Low-Power Networks, and Embedded AI; and in developing dependable enabling technologies for emerging applications, such as Digital Health, Smart Cities, and the Industrial Internet of Things (IoT).