

A portrait of Prof. dr. ir. Valentin Robu, a man with dark hair, smiling, wearing a blue sweater over a light blue collared shirt. The background is a blurred indoor setting.

**Prof.dr.ir. Valentin Robu**  
**April 17, 2025**

**INAUGURAL LECTURE**

# **Enabling decentralized energy systems with artificial intelligence**

**TU/e**

**EINDHOVEN  
UNIVERSITY OF  
TECHNOLOGY**

**DEPARTMENT OF ELECTRICAL ENGINEERING**

## **INVITATION**

Prof.dr.ir. Valentin Robu was appointed full-time professor of Artificial Intelligence for Smart, Decentralized Energy Systems in the Department of Electrical Engineering at Eindhoven University of Technology (TU/e) on November 1, 2023. He will deliver his inaugural lecture on Thursday, April 17, 2025.

The Executive Board of Eindhoven University of Technology cordially invites you to attend the inaugural lecture of Prof.dr.ir. Valentin Robu on **Thursday, April 17, 2025, at 4.00 PM**. The public lecture will be delivered in the Blauwe Zaal of the Auditorium. You do not need to register.

The title of the lecture is

**'Enabling decentralized energy systems with artificial intelligence'**

After the lecture, drinks will be served in the Senaatszaal.

All professors, associate professors and assistant professors are invited to join the cortège. If you would like to participate, please register in advance with the Office of Doctoral Presentations and Academic Ceremonies, phone +31 (0)40 247 37 42, email [penp@tue.nl](mailto:penp@tue.nl).



**Prof.dr. Silvia Lenaerts**

Rector Magnificus

After April 17, 2025, the text of the inaugural lecture will be available online at [www.tue.nl/lectures](http://www.tue.nl/lectures).

Valentin Robu received his master's degree in Artificial Intelligence at the Vrije Universiteit Amsterdam (2003) and his PhD degree at TU Eindhoven (2009), while working as a PhD student at CWI Amsterdam. He was a senior research fellow at the University of Southampton, UK (2009-2014), and then associate professor at Heriot-Watt University in Edinburgh, where he co-founded the Smart Systems Group (2014-2021). In 2020, he returned as a senior researcher at CWI and, on November 1, 2023, he was appointed as a full professor at TU/e. He also held appointments as a visiting scholar/scientist at Harvard University (2015) and MIT (2018-2023) and is currently (since 2022) a Visiting Research Collaborator in the ECE department at Princeton. Dr. Robu has co-authored over 200 papers for top conferences and journals in both EE and CS and has won a number of prizes for his research, such as the IET 2019 Innovation of the Year. He is the PI or Co-I in a number of grants from UKRI, EU and NWO, including CESI, the UK National Centre for Energy Systems Integration, ORCA-Hub, and EU TESTBED-2. He is currently leading two tasks related to energy system integration and market design in GroenvermogenNL.

### About the lecture

Our energy systems are undergoing rapid changes, having to deal with new sources of uncertainty, complex dynamic phenomena, and an increasing degree of decentralization. Consumers are increasingly taking control of their own energy generation and storage, becoming active prosumers, while new types of market-based interaction (often automated) are emerging among parties in the energy system. This raises the question of how we can design and operate decentralized energy system(s) to assure stability and system-wide efficiency and fairness when participating parties are autonomous agents, whose actions the system designer does not directly control. In this talk, Dr. Robu will show how techniques from multi-agent systems and decentralized AI (including algorithmic game theory and machine learning) can play an increasingly important role in managing our energy systems. He will survey some examples based on previous work from his research group, and provide an outlook for future research developments in the field.

**Visiting address** Auditorium, Building 1, Groene Loper, Eindhoven

**Navigation address** De Zaaie, Eindhoven, [www.tue.nl/map](http://www.tue.nl/map)