

Digital cyber twin for cooperative 6G environments

Hosted by [SmartAvatar B.V.](https://smartavatar.nl) and enrolled in the Doctoral Program at the [Technical University of Sofia](https://www.buu.bg/)

Contract Duration: 36 months

PhD Title: Digital cyber twin for cooperative 6G environments

Description

The research aims to design capabilities of real-time DTs to enable the trustworthy and reliable collection of data from millions of sensors in support of smart system optimisation, and also to demonstrate a PoC implementation of the digital cyber twin and its real-time responsiveness. To ensure that sensor data communications with the DT have not been tampered with and that the compute process is secure, a Zero Trust Data security model is proposed. A PoC for a Zero Trust DT architecture will be realised that would demonstrate the following features: (i) protect every sensor message with a different encryption key as a countermeasure to interception and tampering; (ii) process sensitive data within the DT without the risk of leaking information; (iii) transmit control messages to smart transportation and energy systems using a dynamically provisioned encrypted message.

Eligibility Requirements

1. The candidate must not have been awarded a PhD Degree.
2. A Master's Degree is required in Electrical Engineering, Computer Science, Telecommunications, or a related field.
3. Candidates must not have resided in the Netherlands for more than 12 months within the three years preceding their employment start date. Additionally, for the remainder of this period, candidates must provide evidence of residing outside the Netherlands.
4. Proficiency in written and spoken English is required and must be formally demonstrated.
5. Knowledge of cloud computing (AWS, Azure, Google Cloud) and container orchestration (Kubernetes, Docker); Hands-on experience with IoT security, real-time data streaming (Kafka, MQTT, RabbitMQ), and cryptographic techniques;

Strong programming skills in Python, Java, Go, C#, or Rust; Understanding of Zero Trust security models, authentication, and encryption; Experience in blockchain, secure federated learning, or confidential computing; research experience with published work in cybersecurity, AI, or distributed computing is necessary.

Required Documents

1. [Application Form](#)
2. Curriculum Vitae (CV).
3. Letter of motivation.
4. Certificate(s) of Bachelor's Degree(s), with an official English translation if issued in a different language.
5. Academic transcripts for undergraduate studies, with official English translations if issued in a different language.
6. Certificate(s) of Master's Degree(s), with an official English translation if issued in a different language.
7. Academic transcripts for postgraduate studies, with official English translations if issued in a different language.
8. A copy of the Master's thesis.
9. At least two recommendation letters.
10. Certificate of English language proficiency.
11. Copies of publications (if any) in scientific journals and conference proceedings.
12. If selected an Apostille certification of the Master degree issued outside of the EU will be required.

Submission Deadline: April 10, 2025

Applications for this position must be submitted as a **single ZIP** file to Dr. Albena Mihovska and Dr. Neeli Prasad via email at albena.mihovska@smartavatar.nl and neeli.prasad@smartavatar.nl