

PhD Position in the field of Resilient Hybrid Time-sensitive Networks

We are looking for talented students who want to pursue their PhD studies at the School of Electrical Engineering and Computer Science, TU Berlin, Germany. The positions are part of the Telecommunication Networks group headed by Prof. Falko Dressler.

Mission-critical systems, such as in industrial automation, rely on highly resilient, low-latency communication networks. However, current networking solutions —such as time-sensitive networking (TSN) for wired communication and WiFi 7 or 5G for wireless— lack a unified, resilience-centric approach that can withstand impaired link conditions, failures, and cyber-attacks. Accordingly, The Resilient Hybrid Time-sensitive Networks (RESERVE) project aims to ensure reliable end-to-end QoS through seamless hybrid integration that supports real-time, mixed-criticality traffic across wired and wireless links. Hybrid networks will be designed to adapt dynamically to failures, interference, and mobility without compromising service reliability. To enable scalable and adaptive orchestration, centralized, decentralized, and distributed control models will be investigated for resilient reconfiguration. In RESERVE, these objectives will be pursued through analytical modeling, AI-driven optimization, large-scale simulations, and real-world testbeds, leveraging TSN, WiFi 7, and 5G/6G technologies.

The candidate is expected to have a deep understanding of either (i) wired/wireless networking principles, (ii) AI/ML methods for network optimization, and (iii) network simulations and prototyping; experience more than one of the above mentioned research domains is considered a plus. We expect the candidate to have a strong mathematical background, excellent programming skills (Python, C++, Matlab), and Linux experience.

Applicants should have earned an M.Sc. degree in computer science, computer engineering, electrical engineering, or in a related area, and have demonstrated prior achievements (e.g., top grades or publications) in any of the above areas. Enthusiasm for leading-edge research, a mix of creativity and persistence, and team spirit are essential.

Successful candidates are expected to contribute to research projects and teaching as active members of a young team. In return, we provide a relaxed and inspiring working atmosphere allowing you to address interesting and challenging research problems. The salary is very competitive; according and to the German TV-L 13 system (roughly 2,400 Euro after tax).

Interested applicants should send a letter of motivation, a curriculum vitae, scanned transcripts, and contact information of at least two references electronically to Prof. Falko Dressler <dressler@ccs-labs.org> and Dr. Doganalp Ergenc <ergenc@ccs-labs.org> using the subject line “PhD @ TKN”.

For more information, please refer to our web site at <http://www.tkn.tu-berlin.de/>.