

# Ph.D. Position in Edge Computing at TU Darmstadt, Germany

We are looking for an excellent, motivated, and self-driven student for a Ph.D. position focusing on the area of Edge Computing at the Technische Universität Darmstadt, one of the top engineering schools in Germany. The candidate will join the Smart Urban Networks group in Telecooperation Lab (TK, <https://www.tk.informatik.tu-darmstadt.de>) headed by Prof. Max Mühlhäuser.

## Description:

The proliferation of mobile applications has brought about an explosive growth in the market of mobile devices. However, those mobile devices are typically equipped with very limited computing resources due to portability or battery lifetime considerations. Although the situation can be alleviated by offloading computational tasks to distant clouds, the delay between the mobile device and the cloud cannot be tolerated by all applications. Moreover, transferring all the data to the cloud can result in substantial bandwidth cost and is not necessary as data is usually generated and consumed at the edge in the context of Internet-of-Everything.

Edge Computing (also a.k.a. Fog Computing) was born for handling this situation by allocating surrogates (e.g., cloudlets) to the network edge to enhance the performance of computation-intensive mobile applications, while introducing negligible latency. The idea of edge computing is even more promising when more interactive applications such as reality augmentation come into play in the near future.

The accepted candidate will work on exciting research problems under the umbrella of edge computing, including the design of software defined edge computing systems and resource allocation algorithms, and data analytics for Internet-of-Things applications.

## Requirements:

- A Master's degree in Computer Science, Electrical Engineering, or related fields with excellent grades.
- Excellent (oral and writing) English language skills and the ambition to work in dynamic international environment.
- Good knowledge of computer networking and distributed systems.
- Strong programming skills in C/C++ and Python.
- Strong analytical background in modeling and optimization is a plus.
- Experience with SDN platforms and data analytics frameworks such as Spark is advantageous.

## **Application Process:**

We encourage highly qualified individuals meeting the above-mentioned requirements to email the following documents in ONE pdf file to Dr. Lin Wang ([wang@tk.tu-darmstadt.de](mailto:wang@tk.tu-darmstadt.de)) with the subject of “Edge Computing Ph.D. Application”. The shortlisted candidates will be informed of their application status via email.

- Resume/CV showing the applicant’s educational and research background, professional skills, a list of publications, and two references.
- Transcripts for Bachelor's and Master’s degrees.
- A cover letter specifying the applicant’s intent to pursue a Ph.D. in our group.

The accepted candidate will be financially supported through the Ph.D. program from the Chinese Scholarship Council (CSC). The candidate, together with the Smart Urban Networks group in TK, will submit a joint scholarship proposal to CSC. Upon approval by CSC, the candidate will be able to conduct research work at TK with a monthly stipend of €1300. The study can span up to four years and the candidate will receive a Ph.D. degree in Computer Science from TU Darmstadt if qualified.

## **About TU Darmstadt:**

Founded in 1877, TU Darmstadt was the first university worldwide to establish a faculty and a course of study in electrical engineering in 1882. With about 25.000 enrolled students in 13 departments and 286 professors, it is considered one of the top universities for computer science research in Germany. At present it is one of the world's top 100 universities for engineering and technology according to both THE World University Rankings and QS World University Rankings. Darmstadt is centrally located in the Rhein-Main area, it is close to Heidelberg, Cologne, and Frankfurt, with Germany’s biggest airport. You will find more information about TU Darmstadt here:

<https://www.tu-darmstadt.de/index.en.jsp>