**Open PhD position on Millimeter Wave Communication at the**

**Department of Computer Science**

**Technische Universität Darmstadt, Germany**

We are looking for an excellent, motivated, and self-driven student to conduct research in the field of Millimeter wave (mmWave) communication at Technische Universität Darmstadt, one of the top engineering schools in Germany. The candidate will join the wireless communication group in SEEMOO lab (<https://www.seemoo.tu-darmstadt.de>) headed by Prof. Matthias Hollick.

Description:

mmWave plays a key role in 5G in realizing multi-gigabits throughput as well as extreme spatial sharing in very dense scenarios. However, mmWave needs to overcome many physical and medium access obstacles. For instance, mmWave signal has a very high penetration loss and it suffers from deafness problem. These issues stem from the directionality of mmWave communication. The IEEE 802.11ad standard and mmWave community have, to some extend, addressed these issues. Nevertheless, the complexity and performance evaluation of the proposed medium access control techniques remains an open issue.

Successful candidate will perform research on identifying the challenges of medium access in mmWave band and design mechanisms and/or algorithms that solve the problem as well as improve the performance over existing schemes. Further, the candidate will also perform analytical work to prove the viability of the proposed methods. Last but not least, the candidate will validate the practicability of the proposals using the available SDR and off the shelf mmWave devices in the SEEMOO labs.

*Requirements*:

* hold a Master/Bachelor degree in Computer Science or related field
* strong analytical and implementation skills
* strong programming skills (C, C++, MATLAB, Python, etc)
* fluent in English (written and spoken)
* experience with software defined radio is a plus
* self-driven and highly motivated

*Application process:*

We encourage only the highly qualified individuals meeting the above-mentioned requirement to email the following documents in ONE pdf file to Dr. Allyson Sim ([allyson.sim@seemoo.tu-darmstadt.de](mailto:allyson.sim@seemoo.tu-darmstadt.de)) with the subject of “mmWave Vacancy”. Only 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 and Master degrees.
* A cover letter specifying candidate’s intent to pursue a PhD in our group.