PhD position in Data Stream Processing and Privacy Protection

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Big data applications promise to offer smart solutions to many urgent societal challenges such as health care, traffic coordination, energy management, etc. The basic premise for these applications is "the more data the better". Theoretically, any smart-phone and -watch owner could be a continuous source of valuable data and contribute to many useful big data applications. However, such data can reveal a lot of sensible information, like the current location or the heart rate of the owner of such devices. Protection of personal data is important in our society and for example manifested in the EU General Data Protection Regulation (GDPR). However, privacy protection and useful big data applications are hard to bring together. Implementing proper privacy protection requires skills that are typically not in the focus of data analysts and big data developers. Thus, many individuals tend to share none of their data if in doubt whether it will be properly protected. There exist excellent privacy solutions between the "all or nothing" approach. For example, instead of continuously publishing the current location of individuals one might aggregate this data and only publish information of how many individuals are in a certain area of the city. Thus, personal data is not revealed, while useful information for certain applications like traffic coordination is retained.

The goal of the Parrot project is providing tools for real-time data analysis applications that leverage this "middle ground". Data analysts should only be required to specify their data needs and end-users can select the privacy requirements for their data as well as the applications and end-users they want to share their data with. The project results are expected to enable the (semi-)automatic integration of appropriate privacy protection into real-time data stream applications. Thus, individuals can safely provide data which in turn improves the results of big data applications.

The Parrot project is an international collaboration between the University of Oslo (Norway), the University of Groningen (The Netherlands), and the Technical University of Darmstadt (Germany) funded by the Research Council of Norway (2020 – 2023) with three PhD and one PostDoc position. To properly support this collaboration regular exchanges between the teams in Oslo, Groningen, and Darmstadt are organized and funded by the project.

Application deadline: June 6th 2021

Salary PhD Research Fellow: NOK 482 200 – 526 000 per year depending on qualifications

More information about the position and how to apply:

- Parrot project: https://www.mn.uio.no/ifi/english/research/projects/parrot/index.html
- PhD position: https://www.jobbnorge.no/en/available-jobs/job/205382/phd-research-fellow-in-data-stream-processing-and-privacy-protection

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