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September, 2018

# COINS Ph.D. student seminar 2018 (Svalbard) + NISK (Norwegian Information Security Conference)

**Introduction**

This report is a summary of the following 2 events: COINS Ph.D. student seminar, 18.09.2018 and NISK, Norwegian Information Security Conference, 19-20.09.2018. The seminar began with a welcome speech and presentation of participants, continued with 3 presentations regarding Ph.D. life, presentations of research topics of current students, and ended with 2 graduate students talking about possibilities after Ph.D. The conference was a combination of keynote speeches, paper presentations and poster sessions. Detailed description is provided in the next section.

**Topics of COINS seminar**

Many students from different universities had a possibility to attend a very well structured seminar, which has brought benefits and valuable information to fellows starting a ph.d program and fellows writing their thesis and looking for future opportunities.

The first 3 speakers presented different, but equally useful, perspectives of managing the research. Aspects such as work-life balance (hobbies, family life), advantages and disadvantages of flexible working hours, travels, conferences, guidance of master students, choice of research topic, were discussed by experienced graduate students. While the opinions on conducting a fruitful research varied from person to person (from good timing to answer e-mails to networking and trendy research topics), all students were able to relate to many presented ideas and learn what fits them better. Major lessons of these talks were: we are not alone (in ph.d, we can always get help and advice from domain experts) and opportunities after ph.d are numerous (we have to find what fits us best and be persevering).

Next part of the seminar was more technical, students presenting their own projects and giving insights on their methodologies and results. Covered topics were related to biometrics, security and privacy, cyber security and even GDPR. Examples included a visual representation of fake faces in videos, a huge security related issue.

Final part of the seminar was composed of career presentations. The 2 graduates highlighted absolutely different career choices, one in academia and the other in industry. The first speaker continued research as a postdoc and the second took initiative of starting a new company. Both emphasized the process and methods for job seeking, including personal examples, success stories and future vision. These two examples and election of two COINS student representatives concluded the productive seminar.

**Topics of NISK**

At the conference many useful and fascinating topics were covered during the keynote speeches and the paper presentation sessions. Keynote speeches included "Learning Analytics", where the research profile, objectives and scope were promoted. Learning Analytics was defined as measurement, collection, analysis and reporting the data about learners and their context, for understanding and optimizing learning and its environment. Another keynote speech was focused on innovation, digitalization, and communication protection. In addition to the academic talks, industry related experience was also presented during the keynotes. For instance, a long term evolution of a company was detailed, including challenges, team details and offered products and app development.

During the conference, ph.d. students exposed their work in a poster session and offered insights on their methods (which varied from machine learning methods for detecting politician's names and related context, to methods for detecting fake social media accounts). The poster session was organized both days.

Next, a collection of short and regular papers was presented. Some of the topics are as follows: lattice attack on fully homomorphic encryption scheme, correlation attack on stream ciphers, blockchain related myths and facts, regional scans for HTTPS certificates, fake chatroom profile detection, combining threat models with security economics (accidental threat and intentional threat), using Deep Neural Networks such as LSTM to assess face image quality, finger photo verification system, as well as fingerprint presentation attack detection. One of the top interest of business and IT specialists is information security and privacy. Therefore, it has gotten raised attention among researchers as well.

For instance, since 2014 a series of actions have been taken to incentivize HTTPS usage. A cyber safety project has been started to detect fake user accounts on social media, based on few initial featured, in order to prevent children from getting involved in dangerous conversations and protect them from sexual predators or cyber bullying. One of the studies presented biometric recognition and attack using fingerprint photos and artificial fingerprints made out of silicone or play doh. For future work deep neural networks, such as Convolutional Neural Networks, were proposed for the specific database. Other learned lessons were related to blockchain and the land of ambiguity, which presented a few different definitions of blockchain, emphasizing the multitude of blockchain applications with very different requirements.

**Conclusion**

A total of 3 days of activities was summarized in this report. All COINS students participated at the seminar, on the first day, then represented COINS, as a group, at a 2 days NISK conference. Numerous speakers have presented either their work with technical details or their experience as researchers/company leaders. Moreover, awarding afternoon activities were organized for the participants, such as guided sightseeing and reception, as well as arctic wilderness themed conference dinner. All COINS students left Svalbard with a bag of useful information and a set of "cool" experiences.