Travel Report: NISK 2016

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This report is about my participation on NISK 2016 conference on 29th and 30th of November. The conference comprised of paper presentations and the talks by invited speakers. On 29th November, the day started with the talk from Professor Michael Kölling on the topic "Developments in Educational Programming Environments Facing the challenge of programming at all ages. During his session, he talked about the challenges of learning and teaching programming and different tools to overcome those challenges. He also talked about making programming interesting via block-based programming and transitioning from block-based to text based at later point.

The next session was on Malware detection and coding theory. During this session Sergii Banin presented about his paper entitled "Memory access patterns for malware detection". This paper was the result of the Master's Thesis of Sergii. He pointed out that malware developers have techniques to bypass anti-malware software through several obfuscation techniques. So, the work focused on the analysis of basic read and write operations and their n-grams based on the assumption that similar opcodes with similar arguments will result in nearly the same memtraces. It was quite interesting because, the result claim to have obtained the accuracy up to 98.92% using machine learning models.

After lunch, the program started with the invited talk from Tord Søfteland from Experis IT on Testdata in systems with complex infrastructure. In this talk he spoke about the significance of testing in software development and how insufficient testing can increase the cost of the project. He also talked about the data privacy issues and discussed the techniques like sub-setting, model altering, data masking methods, etc.

The next session was for Intrusion Detection which had two paper presentations. Professor Slobodan Petrovic presented both papers on behalf of

his students. The first one was entitled "Row-Based Bit-Parallel Search in Intrusion Detection" in which they proposed a new algorithm based on approximate search for Intrusion Detection Systems instead of exact search. This solves the problem of detecting attacking patterns with small changes on the known attack.

The following day started with an interesting invited talk from Professor Leif Nilsen on the topic "An Eternal Golden Braid". During the talk, he gave a brief history of cryptology in Europe along with the stories of cryptologists during the second world war. The next session was about Cellular and network Security. During this session Vasileios Gkioulos pointed out several Security Vulnerabilities of Cellular Communication including GSM, UMTS, and LTE.

Since one presentation was remaining from the previous day, Ijlal presented her paper entitled "Hey TPM SignMyTransaction". During the talk, she presented a solution of detecting and preventing Man-in-the-browser attack in the online banking transactions which is not detectable by traditional intrusion detection systems. The main concept was to define the trusted path in end user platform allowing the get the screen-shot of the transaction to the bank. The bank then would verify that the transaction. The trusted path between the user and the bank was established via Trusted Platform Module (TPM) which is a hardware module responsible for storing encryption keys, passwords, certificates etc.

After the lunch, there was another invited talk by the CEO of Turbo Tape Games, Fredrik Sundt Breien. He interestingly shared the history Turbo Tape Games and the games that the company have developed. He also mentioned the challenges of Game Development Industry in the market. The presentation was humorous and entertaining.

My overall impression NISK 2016 was good and majority of the talks were interesting and relevant. In the end, I would like to acknowledge COINS for their support to participate in NISK 2016.