MSc diploma subject proposals 2020/21

Specialization: Teleinformation Networks and Systems

1. **Review and investigation of LDPC codes decoding algorithms based on Bit Flipping**
2. **Investigation of sliding window polar codes**
3. **Investigation of results of coefficients quantization of interpolation filters based on I-FIR and FRM structures**
4. **Implementation and research of convolutional neural networks for the detection of vehicle movement anomalies**
5. **Laboratory of Probabilistic Methods and Statistics**
6. **Implementation and research of convolutional neural networks for the steganalysis of digital images**
7. **Research and implementation of reversible data hiding algorithm in encrypted images (RDHEI), based on syndrome-source-coding and MSB prediction**
8. **ASON/GMPLS architecture simulation model with optical connection protection mechanism**
9. **Resource reservation algorithms with QoS guaranty in multidomain ASON/GMPLS network**
10. **Implementation and analysis of cooperation between the SDN concept and IMS/NGN network**
11. **Segment Routing architecture**
12. **Analysis of Message Oriented Middleware for telecommunication servers**
13. **Homomorphic encryption - literature review and implementation of Joux algorithm**
14. **Review and research Hill cipher modifications**

15. **Review and research of algorithms of reversible data hiding in encrypted images**
16. **Methods of Transmission at very high speeds in access networks with copper symmetrical pairs**
17. **Routing protocol optimizations for Global Adress Space (GAS) in the mixed workloads scenario**
18. **Dynamic adaptive routing in GAS models**