CSU34031 – Final Assessment

For the end of semester assessment you are required to write a detailed research paper on one of the following topics:

- Secure Multi-Party Computation
- Electronic Voting Systems
- Autonomous Vehicle Security
- 5G Networking Slicing
- Integration of AI , IoT and Blockchain
- Mobile Communications - 5G, 6G and Beyond
- Decentralized and Quantum Internet
- Energy-efficient Green Communications
- zk-SNARKs and Universal zk-SNARKs
- Threshold Cryptography
- Side-channel Attacks
- Random Number Generation and Entropy Techniques
- Integer Factorization, Discrete Log Attacks and Lattice SVP Improvements

Please note the following editorial guidelines:

- The paper should be tutorial in nature and should be written in a style comprehensible to readers outside the specialty of the article. It is acceptable to have technical/mathematical content as this is central to some of the given topics. However you must strike a balance between the very technical material and for it to be comprehensible by the reader. Another way to put this is that you should have understood the concept/material first and then present it in a more accessible manner to the reader.
- If you can suggest a new/better system after having studied a few, then that would be excellent. However, you must compare to existing models and justify why your design is superior
- The paper should be between **3000-4500** words (Introduction through Conclusions, excluding figures, tables and captions). Abstract, and References are also excluded from the word count.
- Figures and tables should be limited to a combined total of **six**.
- References should be included only to guide readers to more information on the topic; the reference list should not include every available source. A limit of **15** archival references is recommended, of which at least five should be academic conference or journal papers.

We will be assessing your report on the following (not all may apply in each case):

- Depth of Understanding of the Topic/Area of Research
- Security/Scalability/Performance of the System
- Real World Applications
- Privacy Concerns
- Future Trends
- Quality of Writing, Grammar and Punctuation
- Quality of References

Resources:

- IEEE Explore: https://ieeexplore.ieee.org/Xplore/home.jsp
- ACM: https://www.acm.org/
- ArXiv: https://arxiv.org/
- IACR: https://eprint.iacr.org/
- Springer: https://link.springer.com/

You should use the following LaTeX template: http://ftp.heanet.ie/pub/ctan.org/tex/macros/latex/contrib/IEEEtran/IEEEtran_HOWTO.pdf

You can make use of the online LaTeX site called Overleaf to create the manuscript: https://www.overleaf.com/

The submission is worth **80%** of the marks for CSU34031. A single PDF of the manuscript should be submitted via Blackboard before 23:59hrs (GMT+1) on Monday the 24th of May. Please do not use material (text or diagrams) verbatim from any resources that you come across.