# LM 10. Data Science in Security

### Overview

The module gives an overview of application of data science in information security.  The learning material is mainly based on the following survey paper which is provided in the D2L course website as a PDF file. The paper is referred as the Survey Paper in the rest of the document.

Sarker, Iqbal H., A. S. M. Kayes, Shahriar Badsha, Hamed Alqahtani, Paul Watters, and Alex Ng. “Cybersecurity Data Science: An Overview from Machine Learning Perspective.” *Journal of Big Data* 7, no. 1 (December 2020): 41. <https://doi.org/10.1186/s40537-020-00318-5>.

Data science in security is part of protect and detect phase in the NITS security framework.

### To Do List

* 1. Study the learning material of this module - Data Science in Security. Use the learning material document and PowerPoint slides as a guide.
  2. Complete LM12 discussion - Data science application in security. Must be completed by **xx.** The initial post need to be made by xx to qualify for full credit.

### Learning Outcomes

After this module, student will be able to:

* Describe data science in cybersecurity
* Explain data science and data driven tasks in security
* Describe the machine learning tasks in cybersecurity
* Describe the multi-layer framework for smart cybersecurity services