COMP3703 - Final Project Idea

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Final Project Idea

Question 1

- Intended Dataset
- **SUMMARY:** The dataset is very large and mixed with multiple types of attacks and non-attacks along with information that may or may not be pertinent to IDS. I want to explore various algorithms, ML, and CNN to see if any one in particular performs better for particular kinds of attacks and then explore why that is

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Question 2

- This project aims to explore and develop multiple AI-based IDS with varying optimization methods where applicable to observe any patterns of better performing models when pertaining to particular types of attacks
- I want to determine if particular algorithms are better applied to particular types of attacks
- If time permits, I will explore why particular algorithms performed better than others where applicable (Curious about obvious patterns and hidden patterns detected depending on the algorithm and attack)

Question 3

- The end-user is more knowledge focused for AI-developer teams to better understand best use-case scenarios to minimize wasting time developing an algorithm for a problem that has not been explored yet
- Assuming credible information is derived, it should expedite the efficiency and effectiveness of the overall AI-developer team and organization as a whole when making crucial decisions and allocation of finances
- Outputs are likely to be multiple dashboards of performance and associated metrics if time permits, otherwise, cherry-picked visualizations to drive home key findings from project

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Question 4

- At minimum, I should have developed at least two IDS systems and compare where they performed better/worse and explain an assumption as to why
- Ideally, a stark contrast of detection for obvious patterns like repetitive login attempts and more hidden patterns like a trojan or backdoor to poison the AI model

Resources Used

- Hardware Used:
  - Macbook Laptop
- Software Used:
  - Overleaf (PDF editing)
- Resources:
  - COMP3703 Notes
  - Kaggle Dataset