Applications of AI for Anomaly Detection Training

Course Outline

Course Introduction

Anomaly Detection in Network Data Using GPU-Accelerated XGBoost

- ➢ Learn how to detect anomalies using supervised learning:
  - ▪ Prepare data for GPU acceleration using the provided dataset.
  - ▪ Train a binary and multi-class classifier using the popular machine learning algorithm XGBoost.
  - ▪ Assess and improve your model's performance before deployment.

Anomaly Detection in Network Data Using GPU-Accelerated Autoencoder

- ➢ Learn how to detect anomalies using modern unsupervised learning:
  - ▪ Build and train a deep learning-based autoencoder to work with unlabeled data.
  - ▪ Apply techniques to separate anomalies into multiple classes.
  - ▪ Explore other applications of GPU-accelerated autoencoders.

Project: Anomaly Detection in Network Data Using GANs

- ➢ Learn how to detect anomalies using GANs:
  - ▪ Train an unsupervised learning model to create new data.
  - ▪ Use that new data to turn the problem into a supervised learning problem.
  - ▪ Compare the performance of this new approach to more established approaches.

Conclusion

- ▪ Assessment and Q&A