**Youngstown State University**

**MCIS – Capstone Project Proposal**

**AI Enhanced Traffic Optimization and Security for Network Management**

**By: Daniel P Yoder**

### **Faculty Coach**

**Name**: Mr. Todd Jones

**Contact Information**: [tajones01@ysu.edu](mailto:tajones01@ysu.edu)

### **Project Description**

This research project will explore the application of artificial intelligence (AI) to optimize and secure network traffic management in various IT environments. The goal is to explore current methodologies, create a testing environment for a chosen methodology, and create code to leverage AI to optimize and secure that test environment in hopes to enhance network efficiency, reduce latency, and improve security alerting and prevention techniques.

The project will focus on intelligent traffic routing, real-time anomaly detection, threat mitigation, and adaptive load balancing. Through the development and evaluation of AI-based network management and security strategies, this project aims to enhance efficiency, reduce latency, and provide strong security measures within a test environment, applicable to enterprise IT environments using cloud and on-premises solutions alike.

### **Project Plan and Timeline**

1. Research and establish current baseline for technologies in this sector.
2. Leverage EVE-NG to create an environment for testing.
3. Create code to utilize established AI models to optimize and secure systems on test environment.