Project Title: Intent Based Networking using NLP

Project Supervisor:	**Contact Details:**
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Project Objectives (3-5 lines)

1) Simplified Network Management by allowing administrators to express their intent using natural language.

2) Automate the configuration and management of network devices to reduce the manual configuration tasks required to meet the specified intent.

3) Enabling the system to understand and translate human-readable intent into machine-executable configurations using Natural Language Processing.

4) Security and Compliance through the utilization of NLP to express security related intents. For example, isolating devices with suspicious traffic patterns.

Project Description (2-3 paragraphs)

Using NLP to create an intent-based network which will translate human-readable intent into machine-executable configurations to execute commands. Network administrators will express their intent in natural language, and NLP algorithms will convert these expressions into actionable network configurations. Once the intent is translated IBN systems automate the deployment of the network configurations across their infrastructure. This will reduce the need for manual configurations of network devices which can be prone to errors and can be deemed time-consuming.

This project aims to implement a progressive management system which will combine networking with NLP to simplify and automate network operations, improve network reliability, and enhance user experience.

Some of the outcomes that you can expect are simplified network management which will allow even non-technical staff to express and enforce network intents, reduced manual configuration tasks leading to lower operational costs as well as a more efficient process, and finally, improved network performance and reliability with dynamic adaptation to changing conditions.

To conclude, this project leverages IBN and NLP to revolutionise the management of a network making it more responsive to user needs, secure and efficient. It represents an innovative approach to network management which can be applied in educational institutions and in other various environments.

Project Output

☐ System Design and evaluation

☐ Comparative overview or study and evaluation framework

☐ System Analysis and Modelling

☐ Theoretical analysis, Algorithm Design and Development

Required HW/SW

WHAT	WHERE (e.g. University's premises, Student's PC etc.)

Other Requirements

WHAT	LEVEL	IMPACT
Programming		
Algorithm Design		
other		