#### Mohammed Naveed Ul Hasan M Mulla

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Bachelor of Engineering Computer Science and Engineering KLE Technological University, Hubli

#### Education

Degree/Certificate	Institute/Board	CGPA/%	Year
B.Tech., CSE	KLE Technological University, Hubli	8.67 (upto 5 <sup>th</sup> Sem)	Exp. 2026
Pre-University Board	Vidya P. Hanchinmani PU College	90%	2020-2022
SSLC	Pavan English Medium School	93.76%	2020

# **Projects**

### Intrusion Detection System for 5G Networks

Sept 2024 - Jan 2025

Tools: Python, PyTorch, CatBoost

- Designed an IDS using stacked LSTMs with attention mechanisms and CatBoost for feature selection.
- Achieved an accuracy of 94.03% in detecting network intrusions.

#### Exercise Robot for Demonstration Purpose

Nov 2022 - Mar 2023

Tools: Arduino, C++, Servo Motors, Sensors

- Developed an exercise robot using Arduino programming to automate movement routines for fitness exercises.
- Designed an interactive control system for real-time adjustments and programmed predefined exercise sequences.

Smart City Project Aug 2023 - Feb 2024

Tools: C, Data Structures and Algorithms (DSA), Graph Theory, Trees

- Developed a smart city project optimizing urban management solutions using DSA in C.
- Implemented efficient algorithms for traffic management, smart parking, power grid optimization, and emergency services.
- Modeled city infrastructure using graphs and trees to improve decision-making processes.

#### Hybrid GAN & Quantum-based Text Summarization

Mar 2025 - Present

Tools: Python, PyTorch, T5, RoBERTa, Qiskit, Quantum GANs, NLP, BERTScore, ROUGE, BLEU

- Built an abstractive summarization model using a GAN framework with T5 as generator and RoBERTa as discriminator.
- Integrated quantum computing via Qiskit to enhance training efficiency and sampling diversity.
- Trained on a custom XSum dataset and evaluated with ROUGE, BERTScore, BLEU, and perplexity metrics.
- Achieved summaries with improved coherence and semantic accuracy compared to classical approaches.

# **Publications**

**Intrusion Detection in 5G Networks:** Attention with Bias Mechanisms and Gaussian Noise Augmentation for Enhanced Security

Accepted for the Conference on Advances in Communication Networks & Systems (CoaCoNS 2025), Springer, with proceedings in the SCOPUS-indexed Communications in Computer and Information Science (CCIS) series.

### Skills

Programming Languages: C, C++, Python, Basic CSS/JS/HTML

Frameworks and Libraries: NumPy, Pandas, Matplotlib, PyTorch, Sci-kit Learn, Seaborn

### Achievements

## First Place - Exercise Robot Demonstration Competition

November 2022 - March 2023

- Won First Place in the Exercise Robot Demonstration Competition at Avinya Shisyaru, held at KLE Tech. Skills: Arduino Programming, Motion Control, Presentation.