**EDGE COMPUTING**

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Submitted By

**SHASHANK SHANDILYA**

**(4NI20CS096)**

Under The Guidance Of

**NITHIN K**

**Assistant Professor Department of CS & E**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**THE NATIONAL INSTITUTE OF ENGINEERING**

**(An Autonomous College)**

**Mysore-570 008**

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**THE NATIONAL INSTITUTE OF ENGINEERING**

**(An Autonomous institution, affiliated to VTU)**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING Mysore -570008**



**CERTIFICATE**

Certifies that the seminar work entitled ***“EDGE COMPUTING”*** is a work carried out by ***Shashank Shandilya*** *bearing* ***4NI120CS096*** in partial fulfillment for the seminar prescribed by National Institute of Engineering, Autonomous Institution under Vishvesvaraya Technological University, Belgaum for the academic year 2023-2024, Computer Science & Engineering. It is certified that all correction/suggestions indicated for Internal Assessment have been incorporated. The Seminar report has been approved as it satisfies the academic requirements in respect of the seminar work prescribed for the Eight Semester.

**Signature of the Guide Signature of the H.O.D**

**(Mr. Nithin K) (Dr. Anitha R)**

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**ABSTRACT**

Edge computing is a revolutionary approach to data processing, strategically placing computational tasks closer to the source. Unlike traditional cloud computing, which centralizes functions in remote data centers, edge computing distributes these tasks among decentralized edge devices to minimize latency, improve real-time decision-making, and optimize bandwidth use.

Essentially, edge computing utilizes the computational power of devices at the network's edge—sensors, IoT devices, and local servers—to process data locally. This decentralized processing reduces the need for data to travel long distances to centralized servers, enabling rapid responses to critical events. This is particularly beneficial in applications requiring swift decision-making, such as autonomous vehicles and healthcare. A key feature of edge computing is its ability to offer localized processing for time-sensitive applications, ensuring critical data analysis occurs near the data source. This not only reduces latency but also enhances overall system efficiency, making edge computing instrumental for the Internet of Things (IoT) and real-time applications.

The advantages of edge computing span various sectors. In healthcare, it facilitates remote patient monitoring and instantaneous analysis of medical data. In industrial settings, it supports predictive maintenance and equipment health monitoring. Additionally, edge computing is crucial for applications like smart cities, enabling swift processing of data from traffic sensors and surveillance cameras for effective urban management.

Looking ahead, the future of edge computing promises increased integration with artificial intelligence, the introduction of 5G networks for superior connectivity, and ongoing efforts to address security and standardization challenges. Edge computing represents a paradigm shift, empowering decentralized data processing for a more responsive and efficient digital ecosystem.

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