"Intelligent Battery Management"

A PROJECT REPORT

Submitted by,

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Under the guidance of,

Dr. V Chandrasekar

Professor

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in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING
(DATA SCIENCE).

At

PRESIDENCY UNIVERSITY

BENGALURU

JANUARY 2024

PRESIDENCY UNIVERSITY

SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report **"Intelligent Battey Management"** being submitted by **PRIYANSHU RAJ, VASOYA RUSHI & CHOVATIYA PARTH** bearing roll number(s) **20201CSD0215, 20201CSD0100 & 20201CSD0082** in partial fulfilment of requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering [Data Science] is a bonafide work carried out under my supervision.

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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **"Intelligent Battery Management"** in partial fulfilment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **Dr. V Chandrasekar, Professor, School of Computer Science and Engineering [Data Science], Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

Name	Roll Number	Signature
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ABSTRACT

"Intelligent Battery Management System," highlighting its pivotal role in optimizing the efficiency and longevity of batteries across a wide spectrum of applications, ranging from portable electronic devices to electric vehicles. By incorporating cutting-edge machine learning algorithms, the system embodies a comprehensive initiative to monitor, analyze, and oversee crucial aspects of battery health, charging practices, and discharging cycles. Key attributes and features encompass proactive health monitoring, adaptable charging methodologies, dynamic load optimization, a user-friendly interface accessible via web or mobile platforms, integration with energy harvesting technologies, seamless connectivity, and effective identification and rectification of faults. The proactive health monitoring aspect enables strategic maintenance and replacement, mitigating unforeseen failures. The intelligent charging algorithms and dynamic load optimization contribute to controlled charging rates and heightened overall efficiency, especially advantageous for electric vehicles and renewable energy setups. The user-friendly interface empowers users to monitor battery health, receive foresighted insights, and personalize system settings. The integration with energy harvesting technologies further amplifies sustainability. The system's connectivity and diagnostic tools facilitate efficient communication, remote monitoring, and swift identification of potential faults, averting severe malfunctions. Positioned at the forefront of technological progress, the "Intelligent Battery Management System" aspires to fulfill evolving energy storage and management needs, amalgamating machine intelligence with effective algorithms to enhance the sustainability, efficiency, and reliability of battery-driven applications.

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Priyanshu Raj

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