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| <i>Paper Title</i>               | Detection of Depression and Stress Levels in Students using Social Media Data   |
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| <i>Abstract &amp; Keyword</i>    | <p><b>Abstract</b>—Mental health is a critical component of student well-being, yet depression and stress are increasingly prevalent and often undiagnosed within this demographic. Traditional methods for identifying at-risk students are often reactive and limited by social stigma and lack of self-awareness. This paper proposes a non-invasive system for the early detection of depression and stress markers by analyzing students' social media data. Leveraging Natural Language Processing (NLP) and supervised machine learning techniques, the system processes publicly available textual data from platforms like Twitter and Reddit. The methodology involves a pipeline of data acquisition, rigorous preprocessing, feature extraction using TF-IDF (Term Frequency-Inverse Document Frequency), and classification using models such as Support Vector Machines (SVM) and Logistic Regression. The objective is to develop a proactive screening tool that can help educational institutions identify students who may need support, thereby enabling timely intervention. This research emphasizes ethical considerations, ensuring all data is anonymized to protect user privacy, and aims to serve as a proof-of-concept for applying computational methods to enhance student mental healthcare.</p> <p><b>Index Terms</b>—Mental Health, Depression Detection, Stress Detection, Social Media Analysis, Machine Learning, Natural Language Processing (NLP)</p> |
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| <i>Paper Title</i>               | Advancements in Renewable Energy: CSP, Brayton Cycle, and ORC-Based Waste Heat Recovery: A Review   |
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| <i>Abstract &amp; Keyword</i> | <p><b>Abstract</b></p> <p>Global energy demand is increasing rapidly, intensifying the urgency to transition from fossil-based systems toward sustainable and efficient alternatives. Among renewable technologies, Concentrated Solar Power (CSP) offers distinct advantages due to its ability to achieve high operating temperatures and integrate thermal storage for dispatchable power generation. Coupling CSP with advanced thermodynamic cycles such as the Brayton cycle and the Organic Rankine Cycle (ORC) has emerged as a promising strategy to enhance efficiency, flexibility, and waste heat recovery. The helium and supercritical CO<sub>2</sub> Brayton cycles are particularly attractive for high-temperature operation, while ORC systems effectively utilize low- and medium-grade heat from solar or industrial sources. Hybrid configurations—including trigeneration and cascaded cycle designs—demonstrate improved exergy utilization, enabling simultaneous electricity, heating, and cooling production. This review synthesizes current advancements in CSP-driven Brayton and ORC systems, highlights challenges such as materials durability, fluid selection, and control strategies under solar intermittency, and outlines future directions toward integrated multi-generation plants capable of contributing significantly to the global decarbonization agenda.</p> <p><b>Keywords:</b> Concentrated Solar Power (CSP); Brayton Cycle; Organic Rankine Cycle (ORC); Waste Heat Recovery; Supercritical CO<sub>2</sub>; Helium Brayton; Trigeneration; Renewable Energy Systems</p> |
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