|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | **A Low-Cost Smart Wearable Glove for Non-Invasive Health Monitoring** | | |
| **Author(s) Name:** | Tarifuzzaman Riyad, Md. Asif Iqbal, Habib Un Nabi Polash, S.M. Oaliullah Sohrab, and **Shuvra Mondal\*** | | |
| **Contact Email(s):** | shuvra@aiub.edu | | |
| **Published Journal Name:** | Journal of Engineering Research and Reports | | |
| **Type of Publication:** | Journal | | |
| **Volume:** | 26 | **Issue** | 5 |
| **Publisher:** |  | | |
| **Publication Date:** | April 6, 2024 | | |
| **ISSN:** | 1573-2614 | | |
| **DOI:** | https://doi.org/10.9734/jerr/2024/v26i51138 | | |
| **URL:** | https://journaljerr.com/index.php/JERR/article/view/1138 | | |
| **Other Related Info.:** | Page **93–106** | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| Wearable physiological signal monitoring systems hold notable potential in the future of personal healthcare by seamlessly integrating into daily life, providing continuous monitoring, and aiding in the early detection of health issues. This research presents a wearable health monitoring glove, with a focus on cost-effectiveness while maintaining efficiency for developing countries. The wearable glove can track vital physiological indicators like Blood Pressure, Body Temperature, Glucose level, Blood Oxygen Saturation, Hemoglobin level, ECG, Room Temperature, Humidity, and Motion Tracking. A user-friendly interface facilitates easy interaction, while efforts in energy-efficient design and power management aim to prolong battery life. Also, real-time data monitoring ensures precision in signal analysis and the extraction of vital health data of individuals. The proposed wearable hand glove utilizes a collection of sensors and integrates them towards the diverse detection of skin humidity, temperature, blood oxygen, hemoglobin, etc. non-invasively. Apart from its technical features, the research explores potential applications in healthcare, fitness tracking, and research fields, presenting a versatile solution. Beyond its technical attributes, the research explores potential applications in medical and personal healthcare, fitness tracking, sports, etc. Collaborative efforts with regulatory bodies assess the feasibility of obtaining necessary approvals or certifications, while scalability considerations pave the way for potential mass production and market deployment. | |