(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :26/07/2023

(21) Application No.202341050297 A

(43) Publication Date : 01/09/2023

(54) Title of the invention : A REAL TIME CONTACTLESS VITAL SIGNS ESTIMATION SYSTEM

(51) International classification :A61B0005000000, A61B0005024000, G06N0003080000, G06N0003040000, A61B0005080000 (86) International Application No :PCT// / Filing Date :01/01/1900 (87) International Publication No : NA (61) Patent of Addition to Application Number :NA Filing Date :NA (62) Divisional to Application Number :NA Filing Date :NA	(71)**Name of Applicant :** 1)**St. Martin's Engineering College** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- **Name of Applicant : NA** **Address of Applicant : NA** (72)**Name of Inventor :** 1)**Mr. Thirupathi Durgam Assistant Professor, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 2)**Mr. G Poshamallu Assistant Professor, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 3)**Mr. Merugu Sandeep Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 4)**Ms. Dubbaka Pragathi Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 5)**Ms. Komma Siva Sahithi Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 6)**Mr. Yendru satya sai srinivas Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 7)**Mr. Patlola Jayadithya Reddy Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 8)**Mr. Pokala Rohith Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 9)**Mr. Thommandru Subhash Chandra Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 10)**Ms. Ramarapu Pravalika Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 11)**Ms. P Sarika Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 12)**Mr. RachamallaShivateja Reddy Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 13)**Mr. Arelli Chakridhar Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 14)**Ms. Nagi Reddy Manasa Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ---------- 15)**Ms. Angala Sruthi Student, ECE** Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad ----------- ----------

(57) Abstract :
The non-contact monitoring of vital signs, especially the Heart Rate (HR) and Breathing Rate (BR), using facial video is becoming increasingly important. Although, researchers have made considerable progress in the past few years, there are still some limitations to the technology, such as the lack of challenging datasets, the time-consuming nature of the estimation process, and non-portability of the system. A new framework for estimating HRs and BRs by combining a Convolutional Neural Network (CNN) with the Photoplethysmography (PPG) algorithm. The experimental results show that our approach achieves better performance. Meanwhile, we introduce a new challenging dataset (Containing some videos) with fewer constraints, such as large movements, facial expressions.

No. of Pages : 15 No. of Claims : 3