IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.53
Volume 4, Issue 2, July 2024

Design and Development of AI based Wiring Harness Simulator for Pigtail Wiring Harness Development in Electrical Checkout System (ECOS)

Jeganath Y P[1], Dr. Arvind A R[2], Harivignesh G[3]
Pre-Final Year Student, Madras Institute of Technology, Chennai[1]
Deputy General Manager, Ashok Leyland, Chennai[2]
Assistant Manager, Ashok Leyland, Chennai[3]

Abstract: *Electrical Checkout System (ECOS) tool validates electrical loads by quantifying their resistance in a typical production line of a commercial vehicle manufacturing organization. Model specific pigtails needs development for connecting the ECOS equipment with commercial vehicles in production. Conventional manual approach is used for Pigtail ECOS harness design and development which is both time-consuming and prone for errors. This project is related to the accelerated design and development of pigtail ECOS harness utilizing the power of Artificial Intelligence in analyzing the input wiring diagrams spanning multiple sheets in PDF format and accurately identify the wire loads. The AI provides the result in the form of tabulated spreadsheets consisting the data of wiring loads and pin details. Through this project the lead time for harness design and development is reduced significantly.*

Keywords: ECOS, Wiring Harness in Automobiles, Artificial Intelligence, Industry 4.0, Robotic Process Automation, Computer Vision, OpenCV, Tabula, Pandas