(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :15/10/2025
(21) Application No.202511099487 A
(43) Publication Date : 05/12/2025

(54) Title of the invention : AN AI-BASED FRAMEWORK FOR AUTOMATED SOFTWARE REQUIREMENT VALIDATION

| | |
|---|---|
| (51) International classification | :G06F0040300000, G06N0020000000, G06F0008100000, G06Q0030018000, G06F0040253000 |
| (31) Priority Document No | :NA |
| (32) Priority Date | :NA |
| (33) Name of priority country | :NA |
| (86) International Application No<br>Filing Date | :<br>:01/01/1900 |
| (87) International Publication No | : NA |
| (61) Patent of Addition to Application Number<br>Filing Date | :NA<br>:NA |
| (62) Divisional to Application Number<br>Filing Date | :NA<br>:NA |

(71)**Name of Applicant :**
**1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY**
Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. Uttar Pradesh India
(72)**Name of Inventor :**
**1)DHRUV TALREJA**
**2)SURYA PRAKASH SHARMA**

(57) Abstract :
The present invention discloses an AI-based framework for automated software requirement validation comprising a requirement input interface (101), preprocessing engine (102), semantic analyzer (103), machine learning validator (104), compliance checker (105), feedback loop module (106), and stakeholder dashboard (107). The system automatically detects ambiguities, redundancies, inconsistencies, and compliance issues in requirement specifications. It integrates natural language processing, machine learning, and compliance verification to provide reliable, transparent, and adaptive validation. Experimental validation confirms significant accuracy, efficiency, and reduction of manual effort in requirement engineering practices.

No. of Pages : 16 No. of Claims : 6