(54) Title of the invention : MACHINE LEARNING FRAMEWORK FOR PROACTIVE CYBERSECURITY THREAT DETECTION

| | |
|---|---|
| (51) International classification :G06F0021550000, G06N0020000000, G06F0021570000, G06N0003040000, G06N0003080000 | **(71)Name of Applicant :**<br>**1)Prof. (Dr.) Rahul Kumar Mishra**<br>Address of Applicant :Professor, IFTM University, Moradabad, Pin:244102, Uttar Pradesh, India. ————— —————<br>**2)CH. Priyadarshini**<br>**3)Dr. Pankaj Adatiya Tiwari**<br>**4)Mr. Bakkala Santha Kumar**<br>**5)Mr. Nagarjuna Pitty**<br>**6)Ms. Arshiya Mobeen M**<br>**7)Dr. Shraddha Bhushan Sable**<br>**8)Dr. Belsam Jeba Ananth. M**<br>**9)Dr. Narendra Kumar Kamila**<br>**10)Mr. Pradeep G**<br>**11)Dr. Harikumar Pallathadka**<br>**Name of Applicant : NA**<br>**Address of Applicant : NA** |
| (86) International Application No :NA<br>  Filing Date :NA | |
| (87) International Publication No : NA | **(72)Name of Inventor :**<br>**1)Prof. (Dr.) Rahul Kumar Mishra**<br>Address of Applicant :Professor, IFTM University, Moradabad, Pin:244102, Uttar Pradesh, India. ————— ————— |
| (61) Patent of Addition to Application Number :NA<br>  Filing Date :NA | **2)CH. Priyadarshini**<br>Address of Applicant :Assistant Professor, University College of Engineering, JNTUK Kakinada, Pin:533003 Andhra Pradesh, India. ————— ————— |
| (62) Divisional to Application Number :NA<br>  Filing Date :NA | **3)Dr. Pankaj Adatiya Tiwari**<br>Address of Applicant :Head - Research and Innovation, St. Francis College, Koramangala, Bangalore City University, Bangalore, Pin: 560034, Karnataka, India. ————— —————<br>**4)Mr. Bakkala Santha Kumar**<br>Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur Dist., Pin: 522302, Andhra Pradesh, India. ————— —————<br>**5)Mr. Nagarjuna Pitty**<br>Address of Applicant :Principal Research Scientist, Indian Institute of Science, Bengaluru, Pin: 560012, Karnataka, India. ————— —————<br>**6)Ms. Arshiya Mobeen M**<br>Address of Applicant :Assistant Professor, Jeppiaar Engineering College, Old Mamallapuram Road, SH 49A, Semmancheri, Chennai, Pin: 600119, Tamil Nadu, India. ————— —————<br>**7)Dr. Shraddha Bhushan Sable**<br>Address of Applicant :Assistant Professor, Department Computer Science, S. K. College of Science and Commerce, Navi Mumbai, Pin: 400706, Maharashtra, India. ————— —————<br>**8)Dr. Belsam Jeba Ananth. M**<br>Address of Applicant :Associate Professor, Department of Mechatronics Engineering, SRM Institute of Science and Technology, Kattankulathur, Chengalpattu, Pin: 603203, Tamil Nadu, India. ————— —————<br>**9)Dr. Narendra Kumar Kamila**<br>Address of Applicant :Professor, Gita Autonomous College (Biju Patanaik University of Technology), Bhubaneswar, At/Po-Madanpur, Khordha, Pin:752054, Odisha, India. ————— •—————<br>**10)Mr. Pradeep G**<br>Address of Applicant :Research Scholar, Department of Computer Science & Engineering, Dr. M.G.R Educational & Research Institute, Periyar E.V.R. High Road, (NH 4 Highway) Maduravoyal, Chennai, Pin: 600095, Tamilnadu, India. ————— —————<br>**11)Dr. Harikumar Pallathadka**<br>Address of Applicant :Director and Professor, Manipur International University, Ghari, Imphal, Imphal West, Pin: 795140, Manipur, India. ————— ————— |

(57) Abstract :
The disclosed invention presents a pioneering machine learning framework designed for proactive cybersecurity threat detection. Leveraging advanced algorithms and a multi-module architecture, the framework analyzes real-time data from diverse sources, including network traffic and system logs, to identify and mitigate potential cybersecurity threats before they can compromise system integrity. The invention not only distinguishes known threats but also employs continuous learning to recognize novel and emerging risks. With modules for data collection, feature extraction, model training, real-time threat detection, and alerting/mitigation, the framework represents a dynamic and adaptive approach to cybersecurity, contributing to a resilient defense mechanism in the face of evolving cyber threats.

No. of Pages : 15 No. of Claims : 4