(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/09/2025

(21) Application No.202541083617 A

(43) Publication Date : 19/09/2025

(54) Title of the invention : SYSTEM AND METHOD FOR AUTOMATED CYBERSECURITY THREAT DETECTION AND MITIGATION USING ARTIFICIAL INTELLIGENCE

(51) International classification	:H04L0009400000, G06N0020000000, G06N0003088000, G06F0021550000, G06N0003045000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
  1)**Dr. G. Syam Prasad**
    Address of Applicant :Professor & HoD, Department of Computer Science and Engineering, Sri Vasavi Institute of Engineering and Technology (Autonomous), Nandamuru, Pedana, Krishna District, Pin: 521369, Andhra Pradesh, India ---------- ----------
  2)**Siva Naga Prasad Mannem**
  3)**Gudise Suresh Kumar**
  4)**Sk. Ahmad Mohiddin**
  5)**Md. Ahmed**
  6)**A. Koteswara Rao**
  7)**K. Venkateswara Rao**
  8)**Dr. K. Narasimha Raju**
  9)**Peddini Suresh Kumar**
  10)**P. Ashok Kumar**
  11)**Jonnalagadda V N Raju**
  12)**A. Karna Rao**
Name of Applicant : NA
Address of Applicant : NA
(72)Name of Inventor :
  1)**Dr. G. Syam Prasad**
Address of Applicant :Professor & HoD, Department of Computer Science and Engineering, Sri Vasavi Institute of Engineering and Technology (Autonomous), Nandamuru, Pedana, Krishna District, Pin: 521369, Andhra Pradesh, India ---------- ----------
  2)**Siva Naga Prasad Mannem**
Address of Applicant :Assistant Professor, Department of Information Technology, Vishnu Institute of Technology (Autonomous), Kovvada, West Godavari District, Pin: 534202, Andhra Pradesh, India ---------- -----------
  3)**Gudise Suresh Kumar**
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Dhanekula Institute of Engineering and Technology (Autonomous), Ganguru, Vijayawada, Pin: 521139, Andhra Pradesh, India ---------- ----------
  4)**Sk. Ahmad Mohiddin**
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Sri Vasavi Institute of Engineering and Technology (Autonomous), Nandamuru, Pedana, Krishna District, Pin: 521369, Andhra Pradesh, India ---------- ----------
  5)**Md. Ahmed**
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Sri Vasavi Institute of Engineering and Technology (Autonomous), Nandamuru, Pedana, Krishna District, Pin: 521369, Andhra Pradesh, India ---------- ----------
  6)**A. Koteswara Rao**
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Lakireddy Balireddy Colleg of Engineering (Autonomous), Mylavaram, NTR District, Pin: 521230, Andhra Pradesh, India ---------- ----------
  7)**K. Venkateswara Rao**
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Sri Vasavi Institute of Engineering and Technology (Autonomous), Nandamuru, Pedana, Krishna District, Pin: 521369, Andhra Pradesh, India ---------- ----------
  8)**Dr. K. Narasimha Raju**
Address of Applicant :Associate Professor, Department of Computer Science and Engineering, Gayatri Vidya Parishad College of Engineering (Autonomous) Madhurawada, Visakhapatnam, Pin: 530048, Andhra Pradesh, India ---------- ----------
  9)**Peddini Suresh Kumar**
Address of Applicant :Research Scholar, Department of Electronics and Communication Technology, National Institute of Technology, Cachar Silchar, Pin: 788010, Assam, India ---------- ----------
  10)**P. Ashok Kumar**
Address of Applicant :Assistant Professor, Department of Computer Science and Engineering, Sri Vasavi Institute of Engineering and Technology (Autonomous), Nandamuru, Pedana, Krishna District, Pin: 521369, Andhra Pradesh, India ---------- ----------
  11)**Jonnalagadda V N Raju**
Address of Applicant :Assistant Professor, Department of Information Technology, Dhanekula Institute of Engineering and Technology (Autonomous), Ganguru, Vijayawada, Pin: 521139, Andhra Pradesh, India ------------- ----------
  12)**A. Karna Rao**
Address of Applicant :Assistant Professor, Department of Electronics and Communication Engineering, DVR &HS MIC College of Technology, Kanchikacherla, Vijayawada, NTR District, Pin: 521180, Andhra Pradesh, India ---------- ----------

(57) Abstract :
The present invention relates to a system and method for automated cybersecurity threat detection and mitigation using artificial intelligence. The system comprises a data collection module for aggregating network traffic, endpoint activity, and user behavior; an AI-based detection engine employing supervised, unsupervised, and deep learning models to identify both known and unknown threats; a threat intelligence integrator for enhancing detection accuracy through external feeds; and an automated mitigation module for executing countermeasures such as IP blocking, process termination, and device isolation. A feedback and reinforcement learning loop continuously refines detection models, thereby reducing false positives and adapting to evolving attack patterns. The invention provides real-time, self-adaptive cybersecurity defense applicable to enterprise networks, cloud infrastructures, and IoT ecosystems.

No. of Pages : 19 No. of Claims : 8