

(54) Title of the invention : The intuition of the analyst is based on Markov constructs a model on top of high-speed, temporal big data for cyber security

<p>(51) International classification :G06F0017180000, G06F0017110000, G01N0029440000, G06T0007000000, G06F0011070000</p> <p>(86) International Application No :PCT// Filing Date :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)T Gokaramaiah Address of Applicant :Assistant Professor, G. Pullaiah College of Engineering & Technology, Kurnool, Andhra Pradesh, India Pin:518452 Kurnool ----- 2)Mr. Jahan Malik 3)Dr. K.Arutchevnan 4)Dr. D Khalandar Basha 5)R.Ramachandran 6)Dr. Avijit Bhowmick 7)J Sinjini 8)Mr.T.R Arunkumar 9)Dr.K.P.Uma 10)Mallikarjuna Reddy Beram 11)Dr. K.Sivaperumal 12)Dr. Harikumar Pallathadka Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)T Gokaramaiah Address of Applicant :Assistant Professor, G. Pullaiah College of Engineering & Technology, Kurnool, Andhra Pradesh, India Pin:518452 Kurnool ----- 2)Mr. Jahan Malik Address of Applicant :Student, Vellore Institute of Technology, Kelambakkam-Vandalur, Rajan Nagar, Tamil Nadu, India Pin: 600127 Kelambakkam ----- 3)Dr. K.Arutchevnan Address of Applicant :Assistant Professor, Department of Computer and Information Science, Faculty of Science, Annamalai University, Annamalai Nagar, Chidambaram, Cuddalore, Tamil Nadu, India Pin: 608002 Cuddalore ----- 4)Dr. D Khalandar Basha Address of Applicant :Associate Professor, Institute of Aeronautical Engineering, Dundigal, Hyderabad, Medchal, Telangana, India Pin:500 043 Hyderabad ----- 5)R.Ramachandran Address of Applicant :Assistant Professor, Department of Computer and Information Science, Faculty of Science, Annamalai University, Annamalai Nagar, Chidambaram, Cuddalore, Tamil Nadu, India Pin: 608002 Cuddalore ----- 6)Dr. Avijit Bhowmick Address of Applicant :Professor, Dept. of CSE, Budge Budge Institute of Technology, Kolkata, West Bengal, India Pin: 700137 Kolkata ----- 7)J Sinjini Address of Applicant :Assistant Professor, Malla Reddy Engineering College (Autonomous), Main Campus, Maisammaguda(H), Gundlapochampally Village, Medchal Mandal, Medchal-Malkajgiri, Telangana, India Pin:500100 Medchal ----- 8)Mr.T.R Arunkumar Address of Applicant :Assistant Professor, Department of Computer Science, Rani Channamma University, Bhutaramanahatti, Karnataka, Belagavi, Karnataka, India Pin: 591 156 Belagavi ----- 9)Dr.K.P.Uma Address of Applicant :Professor and Head, Hindusthan College of Engineering and Technology, Coimbatore, Tamilnadu, India Pin: 641032 Coimbatore ----- 10)Mallikarjuna Reddy Beram Address of Applicant :Lead I, UST Global, India, 14th Floor, Tower B, Prestige Shantiniketan Complex Rd, Thigalarapalya, Whitefield, Bengaluru, Karnataka, India Pin: 560066 Bengaluru ----- 11)Dr. K.Sivaperumal Address of Applicant :Assistant Professor, Faculty of Science and Humanities, SRM Institute of Science and Technology SRM Nagar, Kattankulathur, Chennai, Tamil Nadu, India Pin: 603203 Chennai ----- 12)Dr. Harikumar Pallathadka Address of Applicant :Director and Professor, Manipur International University, Ghari, Imphal, Imphal West, Manipur, India Pin: 795140 Imphal -----</p>
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(57) Abstract :

[05] Big data analytics, the study of extracting relevant information from enormous datasets, is becoming increasingly popular. Due to the rising use of sensor technology and information and communication technologies, businesses now have access to vast quantities of high-dimensional, streaming, and nonlinear data that was not before available. Error detection in this data is an important use case for eMaintenance systems since it facilitates maintenance decision-making. If problems in these systems are detected and fixed as quickly as possible, system reliability and security can be enhanced, and the risk of unplanned system failures can be avoided. A primary challenge for fault-detection systems is the complexity of the underlying data, which may manifest as high dimensionality, fast-moving data streams, and strong nonlinearity. In data modelling, the curse of dimensionality is a well-known topic. As the number of dimensions rises, the effectiveness of defect detection technologies decreases. To keep up with the processing requirements of rapidly-flowing data streams, algorithms must be able to respond to incoming samples almost quickly. In order to minimise overfitting and underfitting, fault detection systems must communicate effectively when there is a great deal of nonlinearity. Current defect detection methods are most effective in settings with fewer dimensions. The vast majority of theoretical work on high-dimensional defect identification has focused on outlier detection in subspace projections. However, in both models, subspace selection is either wholly random or time-consuming. Multiple strategies have been proposed for making current models accessible online so that they can be utilised for stream data mining. This is necessary if you desire to satisfy the requirements of real-time data streams. However, only a few of research groups have attempted to simultaneously manage large dimensionality and streaming data. Existing methods for detecting nonlinear defects are insufficient in terms of smoothness, efficiency, robustness, and clarity. To effectively handle this issue, we must employ creative strategies. Accompanied Drawing [FIG. 1] [FIG. 2][FIG. 3]

No. of Pages : 17 No. of Claims : 8