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(71)**Name of Applicant :**
1)Dr. S. Prabhanjan
Address of Applicant :Professor Department of Computer Science & Engineering Jyothy Institute of Technology, Bengaluru Pin: 560082 Karnataka India ---------- ----------
2)Dr. Shakeel Ahmed
3)Dr. V. Vidhya
4)Dr. M. Thangaraj
5)Suresha Ramareddy
6)Vishwanatha Shivakumar
7)S. KRISHNA PRABHA
8)Dr. Varun Mohan
9)Dr. R. Jothiraj
10)Dr.B.CHANDRALEKHA
11)Mr. Manthri Sathyanaraynana
12)Mr. Bandham Saidulu
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. S. Prabhanjan
Address of Applicant :Professor Department of Computer Science & Engineering Jyothy Institute of Technology, Bengaluru Pin: 560082 Karnataka India ---------- ----------
2)Dr. Shakeel Ahmed
Address of Applicant :Assistant Professor Department of Chemistry Government Degree College Mendhar Dharana Road, Mendhar Poonch Pin: 185211 Jammu and Kashmir India ---------- ----------
3)Dr. V. Vidhya
Address of Applicant :Associate professor Department of Division of Mathematics Vellore Institute of Technology, Chennai Vellore Institute of Technology, Chennai, Chengalpattu Kancheepuram Pin: 600127 Tamilnadu India ---------- ----------
4)Dr. M. Thangaraj
Address of Applicant :Assistant Professor School of Computer Science & Engineering, Faculty of Engineering and Technology, Jain (Deemed-to-be University), Jakkasandra (P), Kanakapura(Taluk), Ramanagar (District), Pin: 562112 Karnataka India ---------- ---------- ----
5)Suresha Ramareddy
Address of Applicant :Assistant Professor School of Computer Science & Engineering, Faculty of Engineering and Technology, Jain (Deemed-to-be University), Jakkasandra (P), Kanakapura(Taluk), Ramanagar (District), Kanakapura Pin: 562112 Karnataka India ---------- ----------
6)Vishwanatha Shivakumar
Address of Applicant :Assistant Professor School of Computer Science & Engineering, Faculty of Engineering and Technology, Jain(Deemed-to-be University), Jakkasandra (P), Kanakapura(Taluk), Ramanagar (District), Pin :562112 Karnataka India ---------- ----------
7)S. KRISHNA PRABHA
Address of Applicant :ASSISTANT PROFESSOR DEPARTMENT OF MATHEMATICS PSNA COLLEGE OF ENGINEERING AND TECHNOLOGY, KOTHANDARAMAN NAGAR DINDIGUL PIN :624622 TAMILNADU INDIA ---------- ----------
8)Dr. Varun Mohan
Address of Applicant :Associate Professor, Department of Mathematics, Sharda University, Plot No. 32-34, Knowledge Park III, Greater Noida, Gautam Buddh Nagar Pin: 201310 Uttar Pradesh India ---------- ----------
9)Dr. R. Jothiraj
Address of Applicant :Assistant Professor Department of Mathematics Tagore Engineering College, Rathinamangalam, Melakottaiyur Post, Vandalur – Kelambakkam High Road, Chengalpattu Pin :600127 Tamilnadu India ---------- ----------
10)Dr.B.CHANDRALEKHA
Address of Applicant :Assistant Professor Department of Physics Tagore Engineering College, Rathinamangalam, Melakottaiyur Post, Vandalur – Kelambakkam High Road, Chennai Chengalpattu Pin: 600127 Tamilnadu India ---------- ----------
11)Mr. Manthri Sathyanaraynana
Address of Applicant :Research Scholar Department of Mathematics University College of Science Osmania University Faculty of Science, Osmania University, Hyderabad, Pin:500007 Telangana India ---------- ----------
12)Mr. Bandham Saidulu
Address of Applicant :Research Scholar Department of Mathematics University College of Science, Osmania University Faculty of Science, Osmania University, Hyderabad, Pin: 500007 Telangana. India ---------- ----------

(57) Abstract :
A Multivariate Approach for the Biometric Comparison of Analytical Methods in Clinical Chemistry ABSTRACT: In clinical chemistry, the structural connection model is preferred over other methods of analysis. The data from the various methodologies are segregated into two random variables that are absent from this model. The two variables in question are "expected values," which indicate the correct value of the analyte if there were no measurement errors, and "error term," which identifies where the errors occurred. It is believed that both of these variables have normal distributions. Since the correlation coefficient between any two sets of anticipated values from the same set of analytical methods is always 1, we can assert that the relationship between the numerous analytical procedures that can be applied to the same analyte is linear. The linear structure is demonstrated by the predicted values and their standard deviations, or aj. In contrast, the distribution of error terms indicates the precision of the procedures. R is frequently employed as a reliable indicator of the precision of the results. The structural relationship model offers a more genuine comparison of two or more analytical methodologies. It's a modification of well-known regression models. This model was developed as a response to the question, "How can we compare different analytical methods?" Because there are now two options, it is no longer necessary to conduct a regression analysis. Instead, the standardization principle should be implemented. Consider the slope of this principal component to be the ratio of sy to sx. Using an example, we propose and demonstrate how statistical methods can be used to estimate parameters and verify hypotheses.

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