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(51) International classification : F24F0011460000, G06N0005010000, H02J0013000000, G16H0050200000, F24F0011630000	(71)**Name of Applicant :** 1)**CMR Institute of Technology** Address of Applicant :KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401. Hyderabad ----------- ----------- 2)**CMR COLLEGE OF ENGINEERING & TECHNOLOGY** 3)**CMR TECHNICAL CAMPUS** **Name of Applicant : NA** **Address of Applicant : NA** (72)**Name of Inventor :** 1)**Dr K.Rama Krishna Reddy** Address of Applicant :Associate Professor,Freshman Engineering, CMR Institute of Technology, Kandlakoya, Medchal, Hyderabad, Telangana, India. 501401., Hyderabad ----------- ----------- 2)**Dr R.Anantha Lakshmi** Address of Applicant :Associate Professor,Freshman Engineering, CMR Institute of Technology, Kandlakoya, Medchal, Hyderabad, Telangana, India. 501401., Hyderabad ----------- ----------- 3)**Dr M.Prasanthi** Address of Applicant :Assistant Professor, Freshman Engineering, CMR Institute of Technology, Kandlakoya, Medchal, Hyderabad, Telangana, India. 501401., Hyderabad ----------- ----------- 4)**Mr. M Prasanna Anjaneyulu** Address of Applicant :Assistant Professor, H&S, CMR College of Engineering & Technology Hyderabad ----------- ----------- 5)**Mr. Kamala Pratapa** Address of Applicant :Assistant Professor, H&S, CMR College of Engineering & Technology Hyderabad ----------- ----------- 6)**Dr. T. Vidhyanath** Address of Applicant :Assistant Professor, H&S, CMR College of Engineering & Technology Hyderabad ----------- ----------- 7)**M. Nagesh** Address of Applicant :Asst. Prof., Dept. of Mathematics, CMR Technical Campus Hyderabad ----------- ----------- 8)**M Rajendar** Address of Applicant :Asst. Prof., Dept. of Mathematics, CMR Technical Campus Hyderabad ----------- -----------
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(57) Abstract :
ADVANCED HEURISTIC-BASED ALGORITHMIC SYSTEM FOR REAL-TIME NON-LINEAR OPTIMIZATION ACROSS ADAPTIVE DOMAINS
ABSTRACT The present invention relates to a heuristic-based algorithmic system 100 designed for real-time optimization of non-linear systems across adaptive domains. The system comprises a data acquisition module 110 configured to gather real-time data, including system parameters, performance metrics, and environmental conditions from multiple non-linear systems. An adaptive heuristic engine 112 processes the acquired data using adaptive algorithms to determine optimal solutions for complex non-linear optimization problems. A decision-making module 114 evaluates the performance of the non-linear systems based on outputs of the adaptive heuristic engine 112, generating actionable insights for system adjustments. The system also includes a feedback mechanism 116 that continuously refines the adaptive heuristic engine by integrating feedback from the decision-making module 114 and responding to changes in operating conditions. An integration interface 118 enables seamless communication between the algorithmic system and external control systems, allowing for real-time implementation of optimized parameters. This invention enhances dynamic optimization in complex, real-time environments.

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